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Resource
Bulletin **NC-147**

Wisconsin Timber Industry—An Assessment of Timber Product Output and Use, 1990

Ronald L. Hackett and James W. Whipple

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North Central Forest Experiment Station
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FOREWORD

In this bulletin we discuss recent Wisconsin forest industry trends and report the results of a detailed study of forest industry, industrial roundwood production, and associated primary mill wood and bark residue in Wisconsin in 1990. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Likewise, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks are given to the primary wood-using firms that supplied information for this study. Their cooperation is greatly appreciated.

All board foot data in this report have been converted to International 1/4-inch scale by applying a multiplier of 1.08 to all saw-log volume reported in Scribner Decimal C scale by sawmills, a multiplier of 1.04 to all veneer log volume reported in Scribner Decimal C scale by veneer mills, a multiplier of 1.38 to all saw-log volume reported in Doyle scale by sawmills, and a multiplier of 1.14 to all veneer log volume reported in Doyle scale by veneer mills.

The last report from a detailed study of all industrial roundwood output in Wisconsin was published in 1988. Most comparisons in this report are with the 1988 study results. Quantities shown may vary slightly from one table to another because of rounding differences, but these differences are insignificant.

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Wisconsin Timber Industry—An Assessment of Timber Product Output and Use, 1990

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HIGHLIGHTS

PRIMARY TIMBER INDUSTRY—INDUSTRIAL ROUNDWOOD

In terms of volume of wood used, pulp mills dominate Wisconsin's forest industry, but sawmills far outnumber any other category. There were 323 mills of all types operating in Wisconsin in 1990. Wisconsin is divided into five Survey Units (fig. 1).

- Industrial roundwood production rose from 328.7 million cubic feet in 1988 to 342.6 million cubic feet in 1990. Annual production increases averaged 3 percent for softwoods and 2 percent for hardwoods.

- Pulpwood accounted for 66 percent of the industrial roundwood production in 1990.

- In 1990, 83 percent of the total growing-stock removals due to harvest came from aspen, red oak, hard maple, red pine, white birch, jack pine, and soft maple.

Ronald L. Hackett, Research Forester, received a B.S. degree in forest resources from the University of Minnesota. He joined the Forest Service in December 1974, and has been working with the North Central Station's Forest Inventory and Analysis Unit since.

James W. Whipple, Wood Utilization Specialist, received his B.S. in forestry from Michigan Technological University in 1964. He joined the Wisconsin Department of Natural Resources as a field forester in July 1964 and has been in his current position since 1970.

- Log and bolt receipts at active primary mills were 347.5 million cubic feet. Softwood receipts have increased 11 percent and hardwood receipts have increased 4 percent since 1988.

- Total material harvested from timberland for industrial roundwood (excluding residential fuelwood) was 482 million cubic feet. Growing-stock removals accounted for 67 percent (322 million cubic feet) of this total.

PULPWOOD

- Wisconsin produced a record high 3.16 million cords of pulpwood (including mill residues) in 1989. This volume was 2 percent higher than the 1990 production of 3.09 million cords, based on the North Central Station's annual study of pulpwood production. Pulpwood includes all fiber-based products made from roundwood, including paper, particleboard, oriented strand board (OSB), waferboard, and other products.

- Aspen comprises 38 percent of the roundwood cut for pulpwood (fig. 2). Aspen continues to be in high demand, and Wisconsin's pulpwood market remains strong but is slowly declining in favor of pine, birch, and other hardwood species.

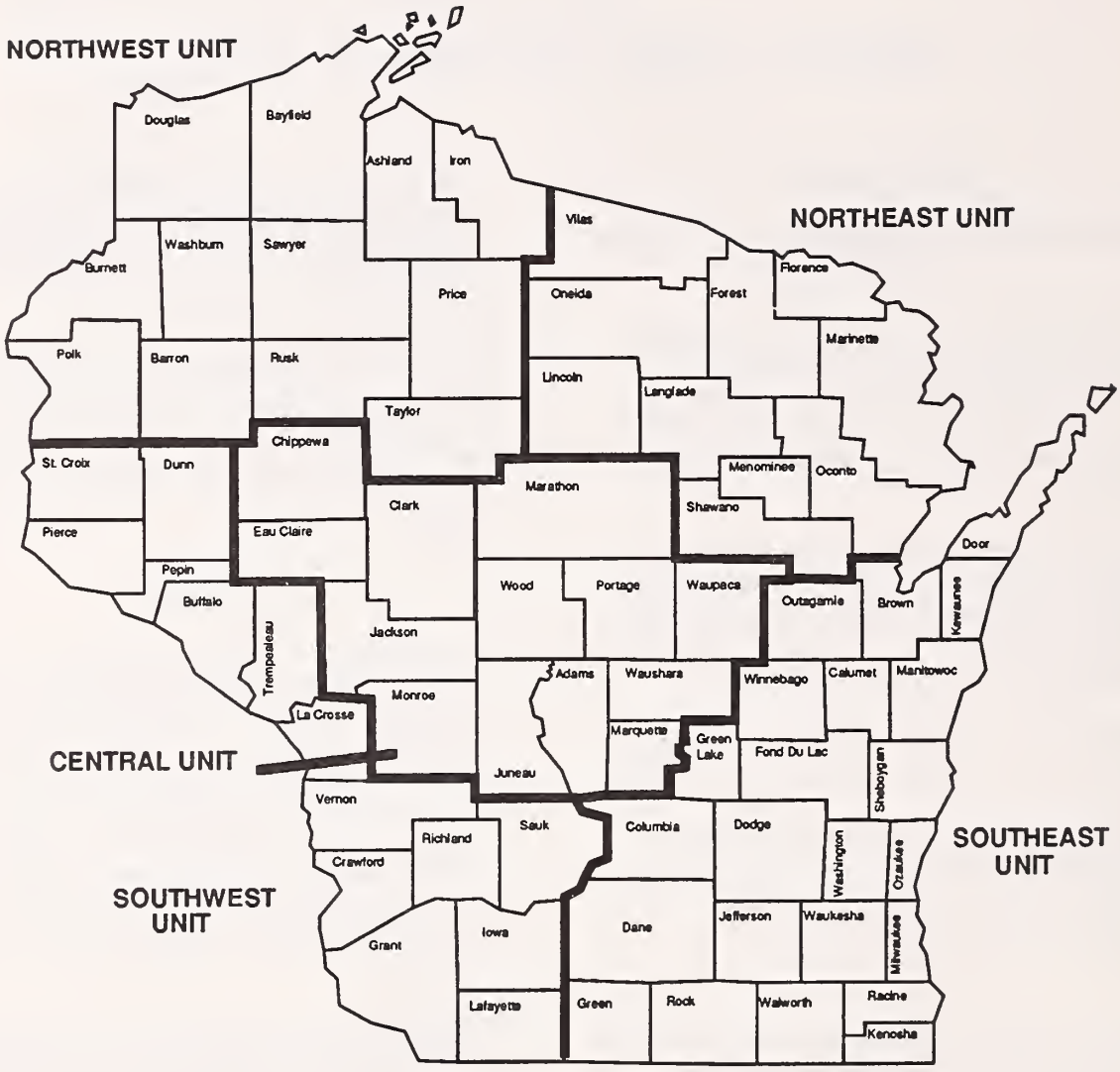

Figure 1.—*Forest Survey Units in Wisconsin.*

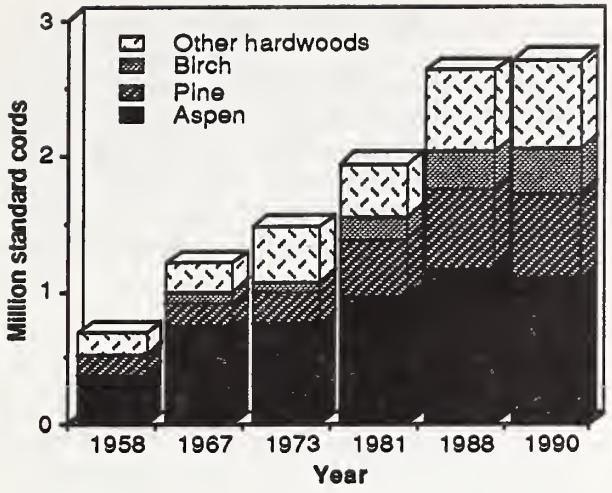

Figure 2.— Pulpwood production of aspen and all species in Wisconsin for selected years.

- Pulp mills in Wisconsin obtained 17 percent of their wood needs from out of State. Aspen, spruce, and jack pine roundwood were primary imports from the Lake States region. Softwood residues from the Western States were also an important import.

- Ninety percent of the pulpwood roundwood cut in Wisconsin in 1990 remained in Wisconsin. More than three-quarters of the exports went to Michigan, and the remainder went to Minnesota. The major species exported were aspen, white birch, hard maple, and soft maple.

- The use of white birch for pulpwood in Wisconsin has nearly doubled in the last 10 years.

SAW LOGS

- Loggers delivered 583 million board feet of Wisconsin saw logs to mills in Wisconsin, Michigan, Minnesota, and other States in 1990—up 4 percent (23 million board feet) from 1988. Nearly 30 percent was red oak.

- Major saw-log species harvested in 1990 were red oak, aspen, hard maple, white oak, and red pine. Aspen saw-log production has decreased 11 percent since 1988.

- Two percent of the saw-log volume—primarily red oak, red pine, and basswood—was shipped to Michigan, Minnesota, and other States outside the region.

- Major production gains since 1988 were in ash (16 million board feet), hard maple (10 million board feet), and soft maple (8 million board feet). Red pine was the only softwood species that showed a production gain of more than 4 million board feet. Major declines since 1988 were in aspen and white pine.

- Leading saw-log producing counties (with more than 20 million board feet each) were Forest, Marinette, Oconto, Oneida, and Grant. Twenty-three other counties each cut more than 10 million board feet.

- In 1990, 268 active sawmills in Wisconsin received 619 million board feet of saw logs; in 1988, 255 sawmills received 591 million board feet.

- Wisconsin imported a total of 35 million board feet of saw logs from Michigan, Minnesota, Iowa, and Illinois in 1990. Major imported species were pine, aspen, and red oak (fig. 3).

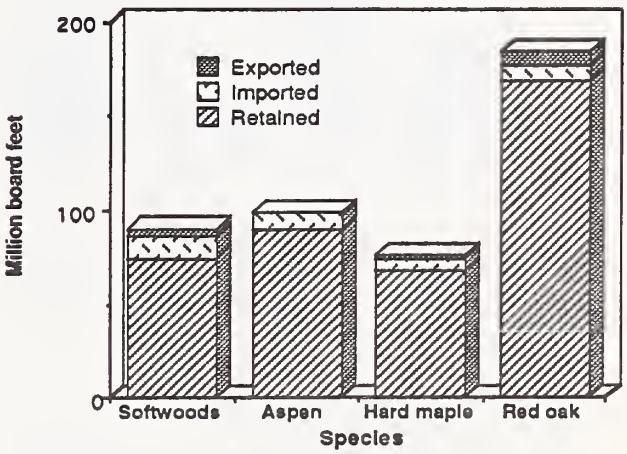

Figure 3.—Saw-log production exported (mills outside Wisconsin), imported, and retained by select species in Wisconsin, 1990.

VENEER LOGS

- Loggers delivered 44.2 million board feet of Wisconsin veneer logs to mills, 4 percent more than in 1988.

- Of the 44.2 million board feet of veneer logs cut in 1990 in Wisconsin, 61 percent remained in the State, 38 percent was shipped to Michigan, and the remainder was sent to Indiana or exported to other States and Canada.

- Red oak was the primary veneer species cut in Wisconsin, followed by aspen, pine, hard maple, and basswood. Aspen and pine were the main exports from Wisconsin to other States and Canada.

- Wisconsin imported 17 million board feet of veneer logs and bolts from Michigan, Minnesota, Iowa, Illinois, and Canada. The major species imported were hard maple, red oak, and basswood (fig. 4).

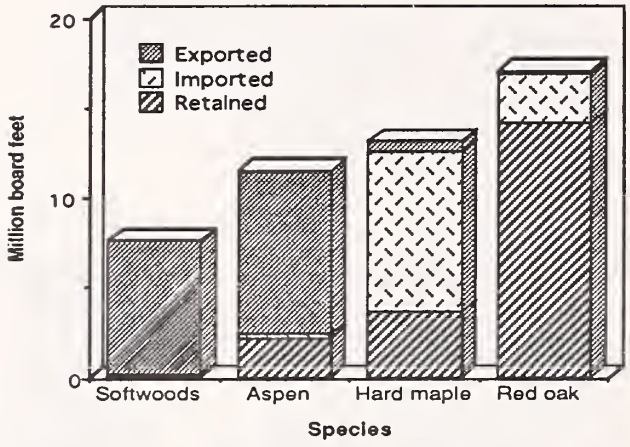

Figure 4.—Veneer production exported (mills outside Wisconsin), imported, and retained by select species in Wisconsin, 1990.

OTHER PRODUCTS

- In 1990, 7.4 million cubic feet of other industrial roundwood products were cut in Wisconsin. These products include commercial posts, industrial fuelwood, shaving bolts, excelsior bolts, and other products.

- In this survey, cabin logs for home building were included with industrial poles (electric and telephone); together, they accounted for 19 thousand pieces.

Residential fuelwood is a major nonindustrial product in Wisconsin. The results of a residential fuelwood study conducted in 1981 are available in Blyth, James E.; Bailey, Michael E.; Smith, W. Brad. 1984. Fuelwood production and sources in Wisconsin, 1981. Resour. Bull. NC-75. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 54 p.

TIMBER REMOVALS

- In the production of industrial roundwood in 1990, 322 million cubic feet of growing-stock removals was received from timberland.

- In the production of industrial roundwood that occurred in 1990, 482 million cubic feet was cut. Only 30 percent of this total was left in the woods as logging residues (fig. 5).

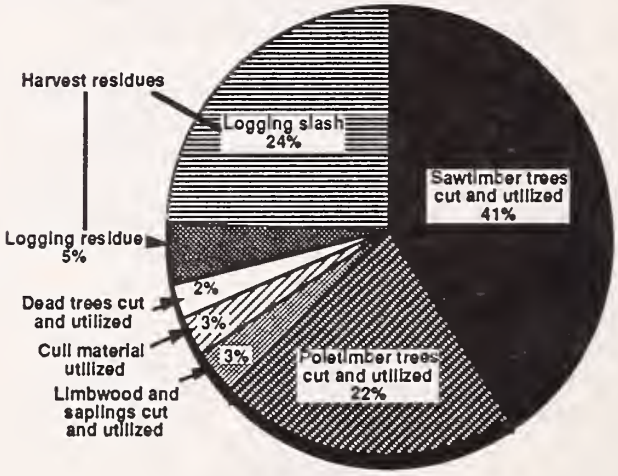

Figure 5.—*Distribution of material harvested for industrial roundwood in Wisconsin, 1990.*

- Major species harvested in both growing stock and sawtimber were aspen, red oak, hard maple, and red pine.

HARVEST RESIDUE

- During 1990, loggers in Wisconsin generated an estimated 139.4 million cubic feet of logging residue; this does not include nonforest removals. Harvest residue consists of all unmerchantable wood fiber not utilized during logging operations on timberland.
- Aspen and red oak accounted for 47 percent of all harvest residues.
- Seven counties—Forest, Langlade, Marinette, Oneida, Vilas, Bayfield, and Sawyer—each produced more than 5 million cubic feet of harvest residue. All the units except the Southeast had counties with more than a million cubic feet of residues.

PRIMARY MILL RESIDUE

- Ninety-six percent or more of each residue class (coarse, fine, bark) generated at Wisconsin primary mills was used.
- During 1990, Wisconsin primary wood-using mills (except the pulp, particleboard, and waferboard mills) generated 868 thousand green tons of coarse residue, 546 thousand green tons of fine residue, and 1,288 thousand green tons of bark.
- Pulpwood mills consumed 61 percent of the coarse residue for fiber products, and industry and households consumed 30 percent for fuel.
- Fine residue and bark were used primarily for industrial fuel, soil conditioner, mulch, livestock bedding, and poultry litter.

APPENDIX

STUDY METHODS

Data for this publication came from responses to a mail questionnaire (see following pages) sent to all known veneer mills, specialty mills (poles, piling, etc.), and all Wisconsin primary sawmills that processed more than 1 million board feet of logs and bolts in 1990. Sawmills processing less than 1 million board feet were contacted to verify ongoing operations, and data from a 1988 study were used to reduce the data collection workload. The latter mills constituted less than 10 percent of the total production, but re-using earlier data from them reduced the workload by approximately 40 percent. The impact of this procedure on sampling error is considered negligible.

The study was a cooperative effort of the Wisconsin Department of Natural Resources (WDNR) and the North Central Forest Experiment Station (NCFES). All canvassing in Wisconsin was done by the WDNR using mail and personal contacts; followup of nonrespondents was by mail, telephone, and personal contacts. WDNR utilization and marketing specialists provided estimates based on prior knowledge and contacts for a few Wisconsin mills that did not furnish complete data.

The NCFES mailed a questionnaire to all pulp mills and all out-of-State mills using Wisconsin roundwood. Followup of nonrespondents was by mail and telephone.

Logging utilization factors were used to estimate the logging residue. These factors were determined from earlier Wisconsin logging studies by the NCFES.

The NCFES edited and compiled the data.

Form Approved
OMB No. 0596-0010

LOGS AND OTHER WOOD PROCESSED IN 1990

WISCONSIN

This form is for reporting the quantities and kinds of logs and other wood processed by this plant in 1990, and the disposition of the wood residues resulting from this operation.

All replies will be held confidential and used only for statistical reports.

☐ Check here if you wish to receive a copy of the report resulting from this study.

Plant or company name: _____

Mailing address: _____

Plant location: _____

Person to contact about this report: _____

Types of wood processed in 1990. *Check only one kind of product. If more than one kind was received, fill out a separate form for each.*

14-15

01	Saw logs & bolts-- includes veneer logs sawn
02	Veneer logs & bolts cut into veneer
03	Cooperage logs and bolts
06	Piling
07	Poles

09	Industrial fuelwood
10	Posts
11	Charcoal wood
12	Other (specify) _____

☐ Check here if no wood was processed in 1990 and return the form.

Total volume of above-checked product that was processed in 1990.

Conifer (pine, cedar, etc.) _____ (27-36) Hardwood (includes cottonwood) _____ (37-46)

DO NOT WRITE IN THIS BLOCK

Cols. 1-5 = 61100

MILL	STATE	COUNTY	FACTOR	
XXX	XX	XXX	XXX	
6-8	9-10	11-13	47-49	50

A self-addressed envelope is provided for your convenience.

This survey is authorized by PL 93-378 as amended by PL 94-588. Your cooperation is appreciated and needed to make the results of this survey comprehensive, accurate, and timely, although you are not required to respond.

LOGS and OTHER WOOD PROCESSED IN 1990.

Do not include logs or bolts sold or transferred to other companies. Enter quantity processed opposite species in appropriate columns showing survey units, other states and Canada where the logs and bolts were harvested. The State map on page 4 shows unit boundaries. If the unit of measure is board feet, indicate the log rule or lumber tally. ☐ Doyle ☐ International ☐ Scribner ☐ Lumber tally
If cords, specify size _____. If weight, specify pounds per thousand board feet _____ or pounds per cord _____.

Cols. 1-5 = 612xx or 613xx

Species	Unit of measure: ☐ Board feet ☐ Cords ☐ Cubic feet ☐ Lineal feet ☐ Pieces ☐ Weight ☐ Other _____		FROM WISCONSIN (enter name of county immediately below)								OTHER STATES AND CANADA (enter name below)	
			XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
Cedar	1											
Balsam fir	2											
Hemlock	3											
Jack pine	4											
Red pine	5											
White pine	6											
Spruce	7											
Tamarack	8											
Ash	9											
Aspen	10											
Balsam poplar	11											
Basswood	12											
Beech	13											
White birch	14											
Yellow birch	15											
Cottonwood	16											
Elm	17											
Hickory	18											
Hard maple	19											
Soft maple	20											
Red oak	21											
White oak	22											
Walnut	23											
Other (specify)	24											
TOTAL												

DISPOSAL OF PLANT RESIDUES IN 1990 BY TYPE AND USE, for product checked on page 1

Instructions: Please enter your best estimate of the **percentage of each type of plant residue** that was used for the various purposes indicated

Cols. 1-5 = 615xx

DISPOSAL OF RESIDUE	BARK		COARSE RESIDUES (Suitable for chipping such as slabs, edgings, etc.)		FINE RESIDUES (Sawdust, veneer, clippings, etc. not suitable for chipping)	
	1 Conifer	2 Hardwood	3 Conifer	4 Hardwood	5 Conifer	6 Hardwood
	XX	XX	XX	XX	XX	XX
1. USED FOR:						
a. Manufacture of fiber products such as pulp, hardboard, or roofing felt 1	%	%	%	%	%	%
b. Charcoal or chemical wood 2	%	%	%	%	%	%
c. Industrial fuel at this or other mill 3	%	%	%	%	%	%
d. Domestic household fuel -- sold or given away 4	%	%	%	%	%	%
e. Miscellaneous uses such as livestock bedding, mulch, small dimension, and specialty items. 5	%	%	%	%	%	%
2. NOT USED: (Including land fill and residues burned as waste. 6	%	%	%	%	%	%
3. TOTAL	%	%	%	%	%	%

DEFINITION OF TERMS

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edging, and veneer cores.

Consumption.—The quantity of a commodity, such as saw logs, utilized.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

Forest Survey Unit.—A geographic area (group of counties) used by the Forest Inventory and Analysis Project to report periodic inventories and use of forest resources.

Growing-stock removals.—The growing-stock volume removed from inventory by harvesting. Consisting of logging residue and the growing-stock volume of products.

Harvest residues.—The total unused wood material left after harvesting.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received by commercial mills.

Logging residue.—The unused growing-stock or sawtimber volume of trees generated by logging and left in the woods.

Logging slash.—The unused portion of unmerchantable section of the tree generated by logging.

Particleboard.—Panel product produced by compressing and bonding small particles of wood. Includes panels made from shavings, flakes, wafers, chips, sawdust, strands, slivers, or wood wool.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Production (timber).—The harvest of timber products. Also called industrial roundwood production, refering to logs, bolts, or other round sections cut from trees for industrial or consumer use.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Standard cord.—A stack of wood bolts (or the equivalent) encompassing 128 cubic feet of wood, bark, and air space. A cord of pulpwood in the North Central Region is assumed to contain 79 cubic feet of wood and 49 cubic feet of bark and air space.

Timberland.—Forest land producing, or capable of producing, crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Generally, this includes areas suitable for growing crops of industrial wood in excess of 20 cubic feet per acre annually.

Veneer log (bolt).—A log or bolt considered suitable in size and quality for producing veneer-sliced or rotary-cut.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED IN THIS REPORT

SOFTWOODS
Jack pine ..... *Pinus banksiana*
Red pine ..... *Pinus resinosa*
Eastern white pine ..... *Pinus strobus*
Spruce
  White spruce ..... *Picea glauca*
  Black spruce ..... *Picea mariana*
Balsam fir ..... *Abies balsamea*
Eastern hemlock ..... *Tsuga canadensis*
Tamarack ..... *Larix laricina*
Northern white-cedar ..... *Thuja occidentalis*
Eastern redcedar ..... *Juniperis virginiana*

HARDWOODS
White oak
  White oak ..... *Quercus alba*
  Bur oak ..... *Quercus macrocarpa*
  Chinkapin oak ..... *Quercus muehlenbergii*
  Swamp white oak ..... *Quercus bicolor*
Red oak
  Northern red oak ..... *Quercus rubra*
  Black oak ..... *Quercus velutina*
  Northern pin oak ..... *Quercus ellipsoidalis*
Hickory
  Bitternut hickory ..... *Carya cordiformis*
  Pignut hickory ..... *Carya glabra*
  Shagbark hickory ..... *Carya ovata*
White birch ..... *Betula papyrifera*
Yellow birch ..... *Betula alleghaniensis*
Hard maple
  Black maple ..... *Acer nigrum*
  Sugar maple ..... *Acer saccharum*
Soft maple
  Red maple ..... *Acer rubrum*
  Silver maple ..... *Acer saccharinum*
American beech ..... *Fagus grandifolia*
Ash
  Black ash ..... *Fraxinus nigra*
  White ash ..... *Fraxinus americana*
  Green ash ..... *Fraxinus pennsylvanica*
Balsam poplar ..... *Populus balsamifera*
Aspen
  Bigtooth aspen ..... *Populus grandidentata*
  Quaking aspen ..... *Populus tremuloides*
Eastern cottonwood ..... *Populus deltoides*
American basswood ..... *Tilia americana*
Black walnut ..... *Juglans nigra*
Elm
  American elm ..... *Ulmus americana*
  Rock elm ..... *Ulmus thomasii*
  Slippery elm ..... *Ulmus rubra*
Other hardwoods
  Northern catalpa ..... *Catalpa speciosa*
  Black cherry ..... *Prunus serotina*
  River birch ..... *Betula nigra*
  Black locust ..... *Robinia pseudoacacia*
  Honeylocust ..... *Gleditsia triacanthos*
  Red mulberry ..... *Morus rubra*
  Butternut ..... *Juglans cinerea*
  Black willow ..... *Salix nigra*
  Boxelder ..... *Acer negundo*
  Hackberry ..... *Celtis occidentalis*

TABLE TITLES

Table 1.—Number of active primary wood-using mills in Wisconsin, 1981, 1986, 1988, and 1990

Table 2.—Industrial roundwood receipts by type of mill in Wisconsin, 1981, 1986, 1988, and 1990

Table 3.—Industrial roundwood production by Forest Survey Unit, species group, and type of product, Wisconsin, 1990

Table 4.—Material harvested on timberland for industrial roundwood by source of material and species group, Wisconsin, 1990

Table 5.—Wisconsin pulpwood production by species group, 1946-1990

Table 6.—Wisconsin pulpwood production by species group and destination, 1990

Table 7.—Pulpwood production by Forest Survey Unit, county, and species group, Wisconsin, 1990

Table 8.—Pulpwood receipts in Wisconsin by species group, 1946-1990

Table 9.—Pulpwood receipts in Wisconsin by area of origin, 1960-1990

Table 10.—Pulpwood receipts in Wisconsin by species group and area of origin, 1990

Table 11.—Saw-log production and receipts in Wisconsin by species group, 1988 and 1990

Table 12.—Saw-log production by Forest Survey Unit, species group, and State of destination, Wisconsin, 1990

Table 13.—Saw-log production by Forest Survey Unit, county, and species group, Wisconsin, 1990

Table 14.—Saw-log receipts in Wisconsin by Forest Survey Unit, species group, and State of origin, 1990

Table 15.—Veneer log production and receipts in Wisconsin for selected years, 1946-1990

Table 16.—Veneer log production and receipts by species group in Wisconsin, 1988 and 1990

Table 17.—Veneer log and bolt production in Wisconsin by species and State or country of destination, 1990

Table 18.—Veneer log receipts in Wisconsin by area of origin for selected years, 1946-1990

Table 19.—Veneer log and bolt receipts in Wisconsin by species group and area of origin, 1990

Table 20.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1990

Table 21.—Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1990

Table 22.—Harvest residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Wisconsin, 1990

Table 23.—Residue produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Wisconsin, 1990

Table 1.--Number of active primary wood-using mills in Wisconsin, 1981, 1986, 1988, and 1990

Kind of mill	1981	1986	1988	1990
Sawmills 1/				
Large 2/	23	21	32	27
Medium 3/	110	103	92	102
Small 4/	140	142	131	139
Total	273	266	255	268
Pulp mills 5/	23	21	22	22
Veneer mills	15	15	17	17
Other mills	12	15	15	16
Total	323	317	309	323

1/ Mills persistently sawing 50 mbf or more annually.

2/ Annual lumber production in excess of 5 million board feet.

3/ Annual lumber production from 1 million to 5 million board feet.

4/ Annual lumber production from 50 thousand to 1 million board feet.

5/ Includes flakeboard plants after 1978, formerly reported in other mills category.

Table 2.--Industrial roundwood receipts by type of mill in Wisconsin, 1981, 1986, 1988, and 1990

(In million cubic feet)

	All species			
Kind of mill	1981	1986	1988	1990
Pulp mills 1/	208.7	224.0	226.1	235.7
Sawmills	94.4	93.2	93.4	97.8
Other mills 2/	6.6	9.7	9.2	14.0
Total	309.7	326.9	328.7	347.5
	Softwoods			
Pulp mills	62.7	55.9	67.2	72.9
Sawmills	15.8	11.3	13.2	13.8
Other mills	0.2	0.4	0.1	2.3
Total	78.7	67.6	80.5	89.0
	Hardwoods			
Pulp mills	146.0	168.1	158.9	162.8
Sawmills	78.6	81.9	80.2	84.0
Other mills	6.4	9.3	9.1	11.7
Total	231.0	259.3	248.2	258.5

1/ Includes flakeboard plants after 1977, formerly reported in other mills category.

2/ Does not include treating plants or fuelwood receipts.

Table 3.-- Industrial roundwood production by Forest Survey Unit, species group, and type of product, Wisconsin, 1990 1/

ALL UNITS

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	1,157	240	--	--	42	2	--	--	2,598	14	268	276	--	532
Balsam fir	357	72	--	--	65,555	5,160	--	--	--	--	--	--	--	5,232
Hemlock	8,958	1,520	--	--	38,012	2,997	--	--	--	--	--	--	--	4,517
Jack pine	5,632	1,180	--	--	305,881	24,124	--	--	--	--	--	--	10	25,314
Red pine	33,890	5,755	893	144	287,044	22,678	--	--	13,648	79	666	684	9	29,349
White pine	28,286	4,797	1,919	311	26,610	2,089	--	--	2,635	14	--	--	--	7,211
Spruce	339	67	4,150	674	48,698	3,831	--	--	--	--	--	--	--	4,572
Tamarack	31	5	423	69	8,506	656	--	--	--	--	--	--	--	730
Total	78,650	13,636	7,385	1,198	780,348	61,537	--	--	18,881	107	934	960	19	77,457
HARDWOODS														
Ash	18,200	3,233	89	9	70,767	5,583	--	--	--	--	--	--	88	8,913
Aspen	90,379	15,778	11,211	1,822	1,096,305	86,597	9,022	601	--	--	--	--	2,737	107,535
Balsam poplar	294	46	--	--	2,762	217	--	--	--	--	--	--	--	263
Basswood	33,734	6,012	3,515	573	31,412	2,476	--	--	--	--	--	--	101	9,162
Beech	954	163	4	--	3,544	269	--	--	--	--	--	--	--	432
White birch	18,868	3,350	281	40	298,450	23,608	--	--	--	--	--	--	390	27,388
Yellow birch	9,432	1,674	285	42	32,510	2,558	--	--	--	--	--	--	14	4,288
Cottonwood	755	126	279	44	--	--	--	--	--	--	--	--	--	170
Elm	4,357	758	1	--	25,191	1,979	--	--	--	--	--	--	--	2,737
Hickory	1,965	335	29	3	4	--	--	--	--	--	--	--	44	382
Hard maple	68,789	11,483	4,105	664	264,334	20,908	--	--	--	--	--	--	275	33,330
Soft maple	35,998	6,425	374	57	190,093	15,030	98	6	--	--	--	--	137	21,655
Red oak	175,097	30,659	14,271	2,324	45,427	3,584	--	--	--	--	--	--	1,795	38,362
White oak	42,907	7,505	2,361	375	13,541	1,055	--	--	--	--	--	--	140	9,075
Walnut	549	93	19	1	--	--	--	--	--	--	--	--	--	94
Other hardwoods	2,664	462	18	--	11,197	878	--	--	--	--	--	--	--	1,340
Total	504,942	88,102	36,842	5,954	2,085,537	164,742	9,120	607	--	--	--	--	5,721	265,126
All species	583,592	101,738	44,227	7,152	2,865,885	226,279	9,120	607	18,881	107	934	960	5,740	342,583

(Table 3 continued on next page)

(Table 3 continued)

NORTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	454	94	--	--	42	2	--	--	2,596	14	268	276	--	386
Balsam fir	200	41	--	--	37,221	2,933	--	--	--	--	--	--	--	2,974
Hemlock	8,569	1,456	--	--	32,512	2,571	--	--	--	--	--	--	--	4,027
Jack pine	3,809	798	--	--	74,390	5,867	--	--	--	--	--	--	--	6,665
Red pine	15,104	2,573	196	32	70,199	5,546	--	--	45	--	--	--	--	8,151
White pine	11,828	2,010	449	74	7,676	605	--	--	20	--	--	--	--	2,689
Spruce	239	49	914	149	31,754	2,503	--	--	--	--	--	--	--	2,701
Tamarack	18	3	102	17	3,825	296	--	--	--	--	--	--	--	316
Total	40,221	7,024	1,661	272	257,619	20,323	--	--	2,661	14	268	276	--	27,909
HARDWOODS														
Ash	6,987	1,249	24	3	26,417	2,089	--	--	--	--	--	--	59	3,400
Aspen	47,956	8,374	2,183	354	409,127	32,320	406	27	--	--	--	--	954	42,029
Balsam poplar	112	17	--	--	131	10	--	--	--	--	--	--	--	27
Basswood	12,674	2,261	801	131	16,344	1,290	--	--	--	--	--	--	--	3,682
Beech	492	86	4	--	2,077	163	--	--	--	--	--	--	--	249
White birch	13,749	2,452	177	26	119,701	9,473	--	--	--	--	--	--	286	12,237
Yellow birch	4,554	811	215	32	16,746	1,322	--	--	--	--	--	--	--	2,165
Cottonwood	35	6	--	--	--	--	--	--	--	--	--	--	--	6
Elm	1,884	333	--	--	8,369	660	--	--	--	--	--	--	--	993
Hickory	269	45	4	--	--	--	--	--	--	--	--	--	--	45
Hard maple	35,923	6,002	2,449	398	117,928	9,331	--	--	--	--	--	--	138	15,869
Soft maple	15,061	2,686	277	44	73,887	5,840	49	3	--	--	--	--	52	8,625
Red oak	19,285	3,375	2,622	427	15,857	1,254	--	--	--	--	--	--	25	5,081
White oak	1,071	183	132	20	4,667	366	--	--	--	--	--	--	--	569
Walnut	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	402	69	6	--	5,879	462	--	--	--	--	--	--	--	531
Total	160,454	27,949	8,897	1,435	817,130	64,580	455	30	--	--	--	--	1,514	95,508
All species	200,675	34,973	10,558	1,707	1,074,749	84,903	455	30	2,661	14	268	276	1,514	123,417

(Table 3 continued on next page)

(Table 3 continued)

NORTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	32	7	--	--	--	--	--	--	--	--	--	--	--	7
Balsam fir	144	28	--	--	27,082	2,131	--	--	--	--	--	--	--	2,159
Hemlock	38	6	--	--	3,834	301	--	--	--	--	--	--	--	307
Jack pine	1,486	311	--	--	108,851	8,586	--	--	--	--	--	--	--	8,897
Red pine	12,567	2,133	697	112	50,562	3,997	--	--	12,710	75	458	472	--	6,789
White pine	7,397	1,253	1,464	236	2,642	204	--	--	--	--	--	--	--	1,693
Spruce	79	15	3,236	525	15,524	1,221	--	--	--	--	--	--	--	1,761
Tamarack	1	--	321	52	3,935	306	--	--	--	--	--	--	--	358
Total	21,744	3,753	5,718	925	212,430	16,746	--	--	12,710	75	458	472	--	21,971
HARDWOODS														
Ash	3,037	540	48	6	28,853	2,277	--	--	--	--	--	--	--	2,823
Aspen	23,857	4,165	8,522	1,387	519,546	41,042	8,560	570	--	--	--	--	1,445	48,609
Balsam poplar	3	--	--	--	2,631	207	--	--	--	--	--	--	--	207
Basswood	8,124	1,448	1,826	297	12,514	987	--	--	--	--	--	--	--	2,732
Beech	--	--	--	--	478	37	--	--	--	--	--	--	--	37
White birch	3,873	692	101	14	138,181	10,932	--	--	--	--	--	--	--	11,638
Yellow birch	4,350	774	67	10	10,560	832	--	--	--	--	--	--	--	1,616
Cottonwood	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	619	105	--	--	8,749	688	--	--	--	--	--	--	--	793
Hickory	101	16	23	3	4	--	--	--	--	--	--	--	--	19
Hard maple	12,497	2,088	488	80	99,201	7,850	--	--	--	--	--	--	--	10,018
Soft maple	4,841	864	25	3	72,325	5,722	--	--	--	--	--	--	--	6,589
Red oak	26,494	4,639	3,390	551	13,942	1,096	--	--	--	--	--	--	--	6,286
White oak	3,891	683	55	7	4,175	326	--	--	--	--	--	--	--	1,016
Walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	155	27	3	--	3,137	250	--	--	--	--	--	--	--	277
Total	91,843	16,041	14,548	2,358	914,296	72,246	8,560	570	--	--	--	--	1,445	92,660
All species	113,587	19,794	20,266	3,283	1,126,726	88,992	8,560	570	12,710	75	458	472	1,445	114,631

(Table 3 continued on next page)

(Table 3 continued)

CENTRAL UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	171	35	--	--	--	--	--	--	1	--	--	--	--	35
Balsam fir	10	2	--	--	1,211	94	--	--	--	--	--	--	--	96
Hemlock	74	12	--	--	1,613	125	--	--	--	--	--	--	--	137
Jack pine	326	69	--	--	114,866	9,060	--	--	--	--	--	--	--	9,129
Red pine	3,717	626	--	--	133,383	10,538	--	--	545	2	67	67	--	11,233
White pine	5,988	1,018	4	1	13,207	1,043	--	--	2,612	14	--	--	--	2,076
Spruce	1	--	--	--	1,235	96	--	--	--	--	--	--	--	96
Tamarack	--	--	--	--	746	54	--	--	--	--	--	--	--	54
Total	10,287	1,762	4	1	266,261	21,010	--	--	3,158	16	67	67	--	22,856
HARDWOODS														
Ash	2,916	515	6	--	14,690	1,157	--	--	--	--	--	--	28	1,700
Aspen	12,668	2,210	298	49	150,760	11,906	--	--	--	--	--	--	331	14,496
Balsam poplar	49	8	--	--	--	--	--	--	--	--	--	--	--	8
Basswood	5,140	915	476	78	2,535	199	--	--	--	--	--	--	96	1,288
Beech	24	4	--	--	745	53	--	--	--	--	--	--	0	57
White birch	587	96	--	--	39,702	3,139	--	--	--	--	--	--	103	3,338
Yellow birch	378	65	3	--	4,948	390	--	--	--	--	--	--	14	469
Cottonwood	10	2	--	--	--	--	--	--	--	--	--	--	--	2
Elm	296	50	--	--	7,278	570	--	--	--	--	--	--	--	620
Hickory	336	56	2	--	--	--	--	--	--	--	--	--	14	70
Hard maple	7,402	1,235	352	58	44,875	3,546	--	--	--	--	--	--	137	4,976
Soft maple	6,326	1,128	13	2	41,515	3,284	--	--	--	--	--	--	85	4,499
Red oak	36,313	6,358	2,071	338	15,171	1,200	--	--	--	--	--	--	1,260	9,156
White oak	9,112	1,594	122	19	4,618	359	--	--	--	--	--	--	117	2,089
Walnut	4	1	2	--	--	--	--	--	--	--	--	--	--	1
Other hardwoods	510	89	1	--	2,105	165	--	--	--	--	--	--	--	254
Total	82,071	14,326	3,346	544	328,942	25,968	--	--	--	--	--	--	2,185	43,023
All species	92,358	16,088	3,350	545	595,203	46,978	--	--	3,158	16	67	67	2,185	65,879

(Table 3 continued on next page)

(Table 3 continued)

SOUTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	15	2	--	--	--	--	--	--	--	--	--	--	--	2
Balsam fir	--	--	--	--	23	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	31	--	--	--	--	--	--	--	--	--
Jack pine	9	2	--	--	6,564	515	--	--	--	--	--	--	10	527
Red pine	2,438	413	--	--	25,228	1,995	--	--	340	2	141	145	9	2,564
White pine	1,914	323	2	--	1,913	147	--	--	--	--	--	--	--	470
Spruce	--	--	--	--	172	11	--	--	--	--	--	--	--	11
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	4,376	740	2	--	33,931	2,668	--	--	340	2	141	145	19	3,574
HARDWOODS														
Ash	3,067	541	4	--	508	39	--	--	--	--	--	--	1	581
Aspen	5,306	925	182	28	14,553	1,148	--	--	--	--	--	--	7	2,108
Balsam poplar	22	3	--	--	--	--	--	--	--	--	--	--	--	3
Basswood	5,857	1,047	334	53	15	--	--	--	--	--	--	--	5	1,105
Beech	--	--	--	--	32	2	--	--	--	--	--	--	--	2
White birch	320	50	3	--	652	48	--	--	--	--	--	--	1	99
Yellow birch	46	6	--	--	189	12	--	--	--	--	--	--	--	18
Cottonwood	545	94	279	44	--	--	--	--	--	--	--	--	--	138
Elm	1,390	247	1	--	779	61	--	--	--	--	--	--	--	308
Hickory	912	158	--	--	--	--	--	--	--	--	--	--	30	188
Hard maple	8,450	1,412	453	70	1,425	111	--	--	--	--	--	--	--	1,593
Soft maple	5,506	986	49	7	1,144	89	--	--	--	--	--	--	--	1,082
Red oak	80,935	14,173	4,961	807	125	8	--	--	--	--	--	--	10	14,998
White oak	23,754	4,163	1,351	217	41	2	--	--	--	--	--	--	23	4,405
Walnut	402	70	6	1	--	--	--	--	--	--	--	--	--	71
Other hardwoods	907	155	2	--	23	--	--	--	--	--	--	--	--	155
Total	137,419	24,030	7,625	1,227	19,486	1,520	--	--	--	--	--	--	77	26,854
All species	141,795	24,770	7,627	1,227	53,417	4,188	--	--	340	2	141	145	96	30,428

(Table 3 continued on next page)

(Table 3 continued)

SOUTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Pieces*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cedar	485	102	--	--	--	--	--	--	1	--	--	--	--	102
Balsam fir	3	1	--	--	18	2	--	--	--	--	--	--	--	3
Hemlock	277	46	--	--	22	0	--	--	--	--	--	--	--	46
Jack pine	2	--	--	--	1,210	96	--	--	--	--	--	--	--	96
Red pine	64	10	--	--	7,672	602	--	--	8	--	--	--	--	612
White pine	1,159	193	--	--	1,172	90	--	--	3	--	--	--	--	283
Spruce	20	3	--	--	13	--	--	--	--	--	--	--	--	3
Tamarack	12	2	--	--	--	--	--	--	--	--	--	--	--	2
Total	2,022	357	--	--	10,107	790	--	--	12	--	--	--	--	1,147
HARDWOODS														
Ash	2,193	388	7	--	299	21	--	--	--	--	--	--	--	409
Aspen	592	104	26	4	2,319	181	56	4	--	--	--	--	--	293
Balsam poplar	108	18	--	--	--	--	--	--	--	--	--	--	--	18
Basswood	1,939	341	78	14	4	--	--	--	--	--	--	--	--	355
Beech	438	73	--	--	212	14	--	--	--	--	--	--	--	87
White birch	339	60	--	--	214	16	--	--	--	--	--	--	--	76
Yellow birch	104	18	--	--	67	2	--	--	--	--	--	--	--	20
Cottonwood	164	24	--	--	--	--	--	--	--	--	--	--	--	24
Elm	168	23	--	--	16	--	--	--	--	--	--	--	--	23
Hickory	347	60	--	--	--	--	--	--	--	--	--	--	--	60
Hard maple	4,517	746	363	58	905	70	--	--	--	--	--	--	--	874
Soft maple	4,264	761	10	1	1,222	95	49	3	--	--	--	--	--	860
Red oak	12,070	2,114	1,227	201	332	26	--	--	--	--	--	--	500	2,841
White oak	5,079	882	701	112	40	2	--	--	--	--	--	--	--	996
Walnut	143	22	8	--	--	--	--	--	--	--	--	--	--	22
Other hardwoods	690	122	6	--	53	1	--	--	--	--	--	--	--	123
Total	33,155	5,756	2,426	390	5,683	428	105	7	--	--	--	--	500	7,081
All species	35,177	6,113	2,426	390	15,790	1,218	105	7	12	--	--	--	500	8,228

1/ Based on factors obtained from the Wisconsin Utilization Study, 1983.

2/ Thousand board feet, International 1/4-inch rule.

3/ Thousand cubic feet.

4/ Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

Table 4.-- Material harvested on timberland for industrial roundwood by source of material and species group, Wisconsin, 1990 1/

(In thousand cubic feet)

Species group	Growing stock				Nongrowing stock						Total material used for products	Total material not used	Total material harvested
	Used for products				Used for products								
	Saw-timber	Pole-timber	Residue (not used)	TOTAL	Limb-wood	Sap-lings	Cull trees	Dead trees	Not used	TOTAL			
SOFTWOODS													
Cedar	285	220	46	551	8	15	4	--	92	119	532	138	670
Balsam fir	2,529	2,207	109	4,845	189	108	30	169	1,399	1,895	5,232	1,508	6,740
Hemlock	2,738	1,375	108	4,221	180	112	75	37	1,153	1,557	4,517	1,261	5,778
Jack pine	7,369	12,859	470	20,698	1,145	734	241	2,965	7,068	12,153	25,313	7,538	32,851
Red pine	15,712	10,591	660	26,963	1,312	870	601	262	6,687	9,732	29,348	7,347	36,695
White pine	5,703	1,141	310	7,154	171	77	81	38	2,237	2,604	7,211	2,547	9,758
Spruce	2,498	1,637	198	4,333	141	81	89	126	1,211	1,648	4,572	1,409	5,981
Tamarack	386	282	27	695	21	12	9	20	193	255	730	220	950
Total	37,220	30,312	1,928	69,460	3,167	2,009	1,130	3,617	20,040	29,963	77,455	21,968	99,423
HARDWOODS													
Ash	4,303	1,912	592	6,807	659	7	431	1,601	3,419	6,117	8,913	4,011	12,924
Aspen	66,589	31,913	6,558	105,060	2,095	21	5,294	1,623	39,180	48,213	107,535	45,738	153,273
Balsam poplar	109	65	13	187	26	--	13	50	97	186	263	110	373
Basswood	5,966	1,304	906	8,176	326	3	357	1,206	3,694	5,586	9,162	4,600	13,762
Beech	216	90	31	337	31	--	18	77	171	297	432	202	634
White birch	6,063	17,299	1,480	24,842	1,878	358	683	1,107	9,144	13,170	27,388	10,624	38,012
Yellow birch	2,138	887	286	3,311	303	2	207	751	1,659	2,922	4,288	1,945	6,233
Cottonwood	143	10	21	174	--	--	5	12	71	88	170	92	262
Elm	1,211	631	160	2,002	228	2	141	524	1,039	1,934	2,737	1,199	3,936
Hickory	311	30	42	383	3	--	5	33	162	203	382	204	586
Hard maple	21,008	7,271	2,656	30,935	2,045	37	2,807	162	11,556	16,607	33,330	14,212	47,542
Soft maple	10,173	7,134	1,380	18,687	1,526	274	1,760	788	7,633	11,981	21,655	9,013	30,668
Red oak	31,933	3,947	4,837	40,717	965	12	1,057	448	15,193	17,675	38,362	20,030	58,392
White oak	7,536	919	1,064	9,519	249	--	266	105	3,761	4,381	9,075	4,825	13,900
Walnut	77	7	12	96	--	--	--	10	43	53	94	55	149
Other hardwoods	646	288	86	1,020	100	--	56	250	524	930	1,340	610	1,950
Total	158,422	73,707	20,124	252,253	10,434	716	13,100	8,747	97,346	130,343	265,126	117,470	382,596
All species	195,642	104,019	22,052	321,713	13,601	2,725	14,230	12,364	117,386	160,306	342,581	139,438	482,019

1/ Factors for determining the amount of wood in each category are based on the Wisconsin Utilization Study, 1983

Table 5.--Wisconsin pulpwood production by species group, 1946-1990

(In thousand standard cords, unpeeled) 1/

Year	Roundwood									Residue	
	Total	Pine	Balsam fir	Hemlock	Spruce	Cedar & tamarack	Aspen	Birch	Other hardwoods	Soft-woods	Hard-woods
1946	433	75	48	64	32	3	202	4	5	2/	2/
1947	497	157	53	50	31	6	187	8	5	2/	2/
1948	472	117	87	51	34	3	167	8	5	2/	2/
1949	427	72	78	47	33	1	184	10	--	2/	2
1950	468	93	69	47	31	2/	195	6	20	1	6
1951	565	102	55	51	30	1	281	28	17	--	--
1952	582	95	76	66	39	1	275	15	15	--	--
1953	553	71	45	51	26	1	306	12	41	--	--
1954	691	113	56	63	31	4	348	27	49	--	--
1955	710	121	48	58	23	4	365	16	75	--	--
1956	960	140	45	56	23	4	507	21	164	--	--
1957	934	126	60	57	27	6	453	27	178	--	--
1958	828	148	62	55	23	6	369	18	147	--	--
1959	972	186	52	49	21	6	431	26	159	5	37
1960	1,052	124	50	52	18	6	540	27	204	4	27
1961	1,078	154	61	47	23	7	530	34	201	3	18
1962	1,140	188	46	42	15	6	572	41	188	6	36
1963	1,302	170	60	52	19	6	613	50	233	13	86
1964	1,244	168	57	52	20	5	603	41	222	11	65
1965	1,253	207	50	60	15	4	607	24	197	14	75
1966	1,536	215	55	69	17	3	810	39	243	12	73
1967	1,417	174	48	42	13	3	739	84	203	10	101
1968	1,298	199	51	44	11	5	629	57	185	16	101
1969	1,450	216	50	51	13	2	697	62	238	15	106
1970	1,656	259	68	53	16	4	771	76	296	19	94
1971	1,552	268	54	42	12	3	736	51	269	16	101
1972	1,538	246	49	42	13	3	685	47	333	10	110
1973	1,758	232	67	32	16	1	761	73	400	21	155
1974	2,053	291	85	45	19	2	797	102	506	26	180
1975	1,505	240	98	45	25	4	588	83	244	36	142
1976	1,840	286	89	43	19	3	694	114	425	38	129
1977	1,816	297	73	43	19	5	696	103	383	48	149
1978	1,895	358	75	52	20	4	669	121	373	40	183
1979 3/	2,109	361	84	40	19	2	751	151	441	49	211
1980	2,362	388	101	34	32	4	873	185	456	40	249
1981	2,389	419	105	29	27	5	965	159	389	47	244
1982	2,285	494	103	33	28	7	884	154	339	42	201
1983	2,475	412	85	40	28	6	1,025	198	422	48	211
1984	2,647	483	84	25	42	4	1,067	208	439	47	248
1985	2,588	452	72	37	36	2	1,073	193	431	51	241
1986	2,926	500	46	37	30	2	1,208	283	528	52	240
1987	2,869	489	45	42	36	2	1,097	256	605	47	250
1988	3,084	574	71	46	43	4	1,171	279	606	56	234
1989	3,161	550	67	43	45	5	1,208	333	619	59	232
1990	3,093	620	66	38	49	9	1,096	331	657	48	179

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard after 1979.

Table 6.-- Wisconsin pulpwood production by species group and destination, 1990

(In thousand standard cords, unpeeled) 1/

Class of material and species group	Total	Michigan	Minnesota	Wisconsin
ROUNDWOOD				
SOFTWOODS				
Cedar	--	--	--	--
Balsam fir	66	1	14	51
Hemlock	38	--	--	38
Jack pine	305	--	8	298
Red pine	287	--	7	280
White pine	26	--	--	26
Spruce	49	--	9	40
Tamarack	8	--	--	8
Total	779	1	38	741
HARDWOODS				
Ash	71	3	--	68
Aspen	1,096	57	26	1,013
Balsam poplar	3	--	3	--
Basswood	32	7	--	25
Beech	3	--	--	3
White birch	299	74	--	225
Yellow birch	32	10	--	22
Cottonwood	--	--	--	--
Elm	25	2	--	23
Hickory	--	--	--	--
Hard maple	264	42	--	222
Soft maple	190	21	5	164
Red oak	46	6	--	40
White oak	14	--	--	14
Other hardwoods	11	3	--	8
Total	2,086	225	34	1,827
Total roundwood	2,865	226	72	2,568
RESIDUES 2/				
Softwood	48	1	7	40
Hardwood	180	15	4	161
Total	228	16	11	201
ALL MATERIAL	3,093	242	83	2,769

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Chippable mill residues such as slabs, edgings, etc. Roundwood chips are included in roundwood.

Table 7.--Pulpwood production by Forest Survey Unit, county, and species group, Wisconsin, 1990

(In standard cords)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
NORTHEAST UNIT														
Florence	28	4,762	2,554	4,865	3,054	350	2,075	160	1,075	34,981	62	814	200	9,621
Forest	--	6,264	1,604	5,505	5,799	217	5,580	694	5,278	36,986	--	1,370	252	12,774
Langlade	--	2,531	864	4,290	5,059	67	994	168	4,326	59,248	--	1,871	144	12,586
Lincoln	--	3,127	540	2,721	2,643	380	1,334	582	3,067	46,700	--	2,529	51	7,409
Marinette	13	5,561	926	24,287	13,093	643	3,390	1,172	2,082	67,246	64	2,073	946	19,837
Menominee	1	293	21,499	1,007	3,697	2,718	34	--	990	11,835	5	82	124	1,300
Oconto	--	622	146	6,132	8,569	347	26	14	457	25,264	--	763	73	6,549
Oneida	--	8,592	2,622	14,866	14,703	1,288	5,760	934	5,388	66,690	--	3,992	43	19,961
Shawano	--	19	843	648	6,171	223	49	--	834	6,412	--	388	164	3,757
Vilas	--	5,450	914	10,069	7,411	1,443	12,512	101	2,920	53,765	--	2,462	80	25,907
Total	42	37,221	32,512	74,390	70,199	7,676	31,754	3,825	26,417	409,127	131	16,344	2,077	119,701
NORTHWEST UNIT														
Ashland	--	3,779	325	8,181	3,198	116	4,766	668	3,761	21,111	--	929	82	12,697
Barron	--	--	--	348	811	20	315	22	259	23,013	--	8	--	2,507
Bayfield	--	2,606	--	16,338	9,652	596	133	--	2,425	96,745	1,431	990	33	21,024
Burnett	--	--	--	21,463	6,923	51	--	--	231	34,579	--	18	--	2,502
Douglas	--	8,852	--	35,588	8,577	272	1,014	41	330	52,338	1,122	254	4	14,309
Iron	--	779	221	181	255	64	358	--	1,480	54,444	78	1,894	71	8,515
Polk	--	--	--	136	277	79	--	--	98	8,641	--	--	3	126
Price	--	4,996	996	2,837	4,548	228	3,636	860	5,483	52,274	--	3,730	110	18,426
Rusk	--	139	89	1,490	1,970	28	500	485	2,218	28,986	--	1,249	2	7,354
Sawyer	--	2,235	615	3,767	5,145	770	2,037	1,023	6,652	72,963	--	1,836	12	25,781
Taylor	--	3,487	1,588	3,809	2,827	71	2,609	822	4,473	30,654	--	1,430	161	10,780
Washburn	--	209	--	14,713	6,379	347	156	14	1,443	43,798	--	176	--	14,160
Total	--	27,082	3,834	108,851	50,562	2,642	15,524	3,935	28,853	519,546	2,631	12,514	478	138,181
CENTRAL UNIT														
Adams	--	408	--	22,809	26,382	1,558	21	112	604	11,987	--	181	5	1,228
Chippewa	--	138	137	2,339	2,407	14	193	264	1,730	21,018	--	505	10	4,717
Clark	--	--	--	3,336	4,680	351	26	--	3,397	29,648	--	442	99	8,503
Eau Claire	--	--	--	1,425	2,940	136	--	22	550	6,609	--	68	22	6,873
Jackson	--	--	--	30,665	10,684	866	141	26	859	16,319	--	116	13	3,583
Juneau	--	--	--	23,065	10,434	565	--	--	524	1,066	--	57	1	1,423
Marathon	--	557	1,223	2,471	5,291	492	326	15	2,909	31,555	--	716	242	5,269
Marquette	--	24	--	3,802	10,791	1,059	40	36	473	271	--	54	--	1,138
Monroe	--	--	--	7,997	7,501	745	197	11	541	1,744	--	36	6	1,312
Portage	--	58	180	4,656	9,603	1,336	43	64	1,257	7,975	--	163	84	2,061
Waupaca	--	26	60	1,643	8,465	1,112	--	11	280	4,246	--	20	124	181
Waushara	--	--	--	3,950	24,762	3,730	27	131	192	1,261	--	14	82	299
Wood	--	--	13	6,708	9,443	1,243	221	54	1,374	17,061	--	163	57	3,115
Total	--	1,211	1,613	114,866	133,383	13,207	1,235	746	14,690	150,760	--	2,535	745	39,702

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	10	631	38	--	--	1	26	--	--	--	--
Crawford	--	--	--	31	21	--	--	--	255	6,586	--	--	26	--
Dunn	--	--	11	3,336	4,929	120	--	--	115	4,294	--	4	1	393
Grant	--	--	--	14	542	--	--	--	--	--	--	--	--	--
Iowa	--	--	--	27	1,866	257	--	--	1	--	--	--	1	--
Lacrosse	--	--	--	494	1,216	70	39	--	15	41	--	1	3	30
Lafayette	--	--	6	--	--	--	--	--	--	--	--	--	--	--
Pepin	--	--	--	336	234	--	--	--	5	48	--	1	--	13
Pierce	--	10	--	318	262	10	133	--	5	95	--	1	--	14
Richland	--	--	--	380	623	--	--	--	--	--	--	--	--	--
St. Croix	--	--	--	285	4,980	97	--	--	41	3,348	--	--	--	26
Sauk	--	13	14	935	5,498	601	--	--	1	115	--	--	1	--
Trempealeau	--	--	--	398	4,426	720	--	--	69	--	--	8	--	176
Vernon	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	23	31	6,564	25,228	1,913	172	--	508	14,553	--	15	32	652
SOUTHEAST UNIT														
Brown	--	--	--	--	294	--	--	--	--	75	--	--	--	--
Calumet	--	--	--	--	15	--	--	--	22	--	--	--	58	--
Columbia	--	--	--	1,097	4,322	373	13	--	31	--	--	4	1	155
Door	--	--	11	53	--	--	--	--	--	44	--	--	--	--
Fond du Lac	--	--	--	--	226	--	--	--	8	--	--	--	2	59
Green	--	--	--	--	216	--	--	--	--	--	--	--	--	--
Green Lake	--	--	--	36	399	--	--	--	36	--	--	--	--	--
Jefferson	--	--	--	--	13	--	--	--	2	--	--	--	3	--
Kewaunee	--	--	--	--	14	--	--	--	--	--	--	--	--	--
Manitowoc	--	18	11	--	91	92	--	--	60	--	--	--	123	--
Milwaukee	--	--	--	10	15	--	--	--	--	--	--	--	--	--
Outagamie	--	--	--	--	274	92	--	--	133	2,200	--	--	15	--
Ozaukee	--	--	--	14	22	--	--	--	--	--	--	--	--	--
Racine	--	--	--	--	11	--	--	--	--	--	--	--	--	--
Sheboygan	--	--	--	--	761	--	--	--	--	--	--	--	--	--
Waukesha	--	--	--	--	986	615	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	13	--	--	--	7	--	--	--	10	--
Total	--	18	22	1,210	7,672	1,172	13	--	299	2,319	--	4	212	214
State total	42	65,555	38,012	305,881	287,044	26,610	48,698	8,506	70,767	1,096,305	2,762	31,412	3,544	298,450

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Yellow birch	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	O. hard-woods	All species
NORTHEAST UNIT									
Florence	899	159	--	5,579	3,726	770	249	246	76,229
Forest	2,082	3,003	--	17,452	12,913	2,247	1,236	397	121,653
Langlade	1,858	1,018	--	16,605	10,141	2,411	771	806	125,758
Lincoln	1,068	1,297	--	10,562	6,443	1,468	290	449	92,660
Marinette	5,177	684	--	23,224	11,960	2,737	234	2,216	187,565
Menominee	409	511	--	4,124	3,763	399	115	58	52,964
Oconto	1,207	205	--	5,375	3,119	714	42	397	60,021
Oneida	1,560	680	--	17,589	11,005	2,714	1,057	473	179,917
Shawano	1,076	170	--	5,928	3,794	676	100	402	31,654
Vilas	1,410	642	--	11,490	7,023	1,721	573	435	146,328
Total	16,746	8,369	--	117,928	73,887	15,857	4,667	5,879	1,074,749
NORTHWEST UNIT									
Ashland	1,680	1,128	--	13,289	8,447	1,708	899	368	87,132
Barron	81	4	--	938	480	123	23	36	28,988
Bayfield	860	287	--	8,720	7,301	979	310	199	170,629
Burnett	62	4	--	816	835	134	22	30	67,670
Douglas	165	20	--	1,420	7,467	229	32	69	132,103
Iron	1,641	397	--	9,487	6,580	1,351	35	570	88,401
Polk	14	84	--	200	136	2	--	--	9,796
Price	1,679	917	--	18,324	11,203	2,751	888	601	134,487
Rusk	651	50	2	8,097	4,443	1,292	206	315	59,566
Sawyer	1,879	747	2	21,248	12,684	3,313	1,027	600	164,336
Taylor	1,548	5,020	--	12,654	10,258	1,456	656	163	94,466
Washburn	300	91	--	4,008	2,491	604	77	186	89,152
Total	10,560	8,749	4	99,201	72,325	13,942	4,175	3,137	1,126,726
CENTRAL UNIT									
Adams	165	13	--	2,106	1,523	2,085	289	78	71,554
Chippewa	447	159	--	6,102	3,245	875	289	157	44,746
Clark	834	1,042	--	8,123	8,801	1,504	836	350	71,972
Eau Claire	164	356	--	1,793	1,930	240	56	165	23,349
Jackson	242	189	--	2,654	5,308	3,375	832	277	76,149
Juneau	115	96	--	1,370	1,348	2,924	484	90	43,562
Marathon	1,469	3,843	--	9,733	8,374	921	339	339	76,084
Marquette	109	25	--	1,271	863	268	172	8	20,404
Monroe	84	69	--	1,018	1,118	603	179	64	23,225
Portage	494	1,226	--	3,654	3,128	604	250	201	37,037
Waupaca	260	7	--	1,975	1,282	159	35	174	20,060
Waushara	179	6	--	1,130	646	635	304	112	37,460
Wood	386	247	--	3,946	3,949	978	553	90	49,601
Total	4,948	7,278	--	44,875	41,515	15,171	4,618	2,105	595,203

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Yellow birch	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	O. hard-woods	All species
SOUTHWEST UNIT									
Buffalo	1	3	--	3	3	--	--	--	716
Crawford	128	766	--	664	690	25	--	--	9,192
Dunn	27	5	--	364	195	56	10	15	13,875
Grant	--	--	--	--	--	--	--	--	556
Iowa	3	--	--	12	4	1	--	2	2,174
Lacrosse	8	1	--	59	33	6	4	4	2,024
Lafayette	--	--	--	--	--	--	--	--	6
Pepin	1	--	--	14	20	2	2	--	676
Pierce	1	--	--	16	10	2	2	--	879
Richland	--	--	--	--	--	--	--	--	1,003
St. Croix	--	--	--	73	34	--	--	--	8,884
Sauk	2	--	--	24	20	1	--	1	7,226
Trempealeau	18	4	--	196	135	32	23	1	6,206
Total	189	779	--	1,425	1,144	125	41	23	53,417
SOUTHEAST UNIT									
Brown	--	--	--	--	90	--	--	--	459
Calumet	--	--	--	54	83	--	--	--	232
Columbia	9	2	--	203	63	15	10	3	6,301
Door	--	--	--	--	--	--	--	--	108
Fond du Lac	5	14	--	32	78	8	3	11	446
Green	--	--	--	--	--	--	--	--	216
Green Lake	--	--	--	3	4	--	--	--	478
Jefferson	6	--	--	25	9	2	--	4	64
Kewaunee	--	--	--	--	--	--	--	--	14
Manitowoc	--	--	--	61	117	240	--	--	813
Milwaukee	--	--	--	--	--	--	--	--	25
Outagamie	28	--	--	441	747	62	27	21	4,040
Ozaukee	--	--	--	--	--	--	--	--	36
Racine	--	--	--	--	--	--	--	--	11
Sheboygan	--	--	--	--	--	--	--	--	761
Waukesha	--	--	--	--	--	--	--	--	1,601
Winnebago	19	--	--	86	31	5	--	14	185
Total	67	16	--	905	1,222	332	40	53	15,790
State total	32,510	25,191	4	264,334	190,093	45,427	13,541	11,197	2,865,885

Table 8.--Pulpwood receipts in Wisconsin by species group, 1946-1990

(In thousand standard cords, unpeeled) 1/

	Roundwood									Residue	
Year	Total	Pine	Balsam fir	Hemlock	Spruce	Cedar & tamarack	Aspen	Birch	Other hardwoods	Soft-woods	Hard-woods
1946	1,902	298	280	233	645	16	416	14	2/	2/	2/
1947	1,722	292	230	134	687	19	346	13	2/	2/	1
1948	1,741	307	279	136	663	5	333	17	2/	2/	1
1949	1,426	227	244	101	502	3	332	15	2/	2/	2
1950	1,442	244	238	91	441	3	387	10	21	1	6
1951	2,097	428	232	120	678	10	569	42	18	--	--
1952	2,059	365	288	131	732	6	490	32	15	--	--
1953	1,689	283	179	76	529	2	552	26	42	--	--
1954	1,919	298	228	125	608	5	566	40	49	--	--
1955	1,777	319	199	92	471	5	590	26	75	--	--
1956	2,136	397	195	143	445	9	754	27	166	--	--
1957	2,247	325	254	116	578	14	739	38	183	--	--
1958	1,866	318	200	90	479	18	583	19	159	--	--
1959	1,881	436	169	87	345	17	619	30	165	7	6
1960	2,114	388	176	97	389	26	785	31	208	7	7
1961	1,972	330	177	92	350	19	741	44	196	12	11
1962	2,124	395	155	99	317	19	784	49	206	51	49
1963	2,429	414	175	114	341	22	877	64	235	96	91
1964	2,271	350	139	110	314	20	855	62	233	96	92
1965	2,290	410	114	120	300	19	899	26	219	91	92
1966	2,701	473	139	162	301	11	1,112	44	270	100	89
1967	2,729	415	140	100	308	42	1,115	91	259	135	124
1968	2,226	405	100	86	200	33	860	59	205	160	118
1969	2,514	456	81	112	208	25	978	63	278	192	121
1970	2,821	498	111	118	208	43	1,088	81	333	189	152
1971	2,581	514	88	83	167	37	1,011	53	295	193	140
1972	2,450	443	82	69	181	31	902	48	354	198	142
1973	2,696	387	103	54	224	28	1,006	68	398	279	149
1974	3,135	508	133	69	161	36	1,109	115	558	257	189
1975	2,344	391	155	73	146	30	791	89	288	216	165
1976	2,713	437	137	66	121	34	926	133	486	256	117
1977	2,596	416	109	43	94	31	915	120	445	299	124
1978	2,676	491	99	50	82	25	888	145	450	301	145
1979 3/	3,067	567	115	39	76	21	999	178	548	332	192
1980	3,266	518	147	40	94	34	1,118	231	562	268	254
1981	3,154	512	135	31	86	31	1,182	189	477	252	259
1982	2,978	565	131	36	79	37	1,092	173	434	209	222
1983	3,114	470	114	43	65	27	1,220	217	502	222	234
1984	3,301	540	108	26	95	15	1,269	228	552	204	264
1985	3,104	500	97	39	80	4	1,250	202	494	198	240
1986	3,270	543	59	40	63	4	1,370	240	518	192	241
1987	3,130	538	45	46	73	3	1,199	220	592	157	257
1988	3,287	641	59	48	97	6	1,223	233	555	181	244
1989	3,339	627	60	45	104	6	1,247	274	582	150	244
1990	3,334	685	59	41	125	13	1,158	277	628	177	171

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard after 1979.

Table 9.--Pulpwood receipts in Wisconsin by area of origin, 1960-1990

(In thousand standard cords, unpeeled) 1/

Year	All areas	Area of Origin				
		Michigan	Wisconsin	Minnesota	Other States	Canada
1960	2,115	510	1,008	308	82	207
1961	1,972	464	1,050	240	44	174
1962	2,124	540	1,114	216	108	146
1963	2,429	628	1,262	221	153	165
1964	2,272	588	1,207	193	135	149
1965	2,290	608	1,225	159	135	163
1966	2,701	666	1,501	193	185	156
1967	2,729	660	1,387	299	234	149
1968	2,227	455	1,259	166	223	124
1969	2,513	537	1,412	188	257	119
1970	2,820	610	1,627	219	249	115
1971	2,581	567	1,502	188	234	90
1972	2,450	470	1,493	166	230	91
1973	2,697	418	1,671	194	291	123
1974	3,135	534	2,004	261	269	67
1975	2,344	449	1,460	178	177	80
1976	2,713	434	1,784	182	203	110
1977	2,596	407	1,713	154	227	95
1978	2,676	404	1,779	162	242	89
1979 2/	3,067	516	2,024	169	266	92
1980	3,266	490	2,298	216	170	92
1981	3,155	419	2,320	177	164	75
1982	2,979	396	2,231	179	131	42
1983	3,114	391	2,399	155	137	32
1984	3,301	442	2,534	184	134	7
1985	3,104	392	2,465	105	127	15
1986	3,270	369	2,693	69	116	23
1987	3,130	313	2,644	62	90	21
1988	3,288	311	2,771	79	102	25
1989	3,338	319	2,799	116	90	14
1990	3,334	313	2,768	127	107	19

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard after 1979.

Table 10.--Pulpwood receipts in Wisconsin by species group and area of origin, 1990

(In thousand standard cords, unpeeled) 1/

Type of material and species group	Total receipts	Origin of material				
		Michigan	Minnesota	Wisconsin	Other U.S.	Canada
ROUNDWOOD						
SOFTWOODS						
Cedar	--	--	--	--	--	--
Balsam fir	59	8	(2/)	51	--	--
Hemlock	41	3	--	38	--	--
Jack pine	365	60	7	298	--	--
Red pine	293	9	4	280	--	--
White pine	27	1	(2/)	26	--	--
Spruce	126	40	46	40	--	--
Tamarack	12	2	2	8	--	--
Total	923	123	59	741	--	--
HARDWOODS						
Ash	72	4	--	68	--	--
Aspen	1,157	104	40	1,013	--	--
Basswood	26	1	(2/)	25	--	--
Beech	6	3	--	3	--	--
White birch	249	3	21	225	--	--
Yellow birch	28	6	--	22	--	--
Elm	23	(2/)	--	23	--	--
Hickory	(2/)	--	--	(2/)	--	--
Hard maple	252	30	--	222	--	--
Soft maple	180	12	4	164	--	--
Red oak	42	2	--	40	--	--
White oak	14	(2/)	--	14	--	--
Other hardwoods	12	4	--	8	--	--
Total	2,061	169	65	1,827	--	--
All species	2,984	292	124	2,568	--	--
RESIDUES 3/						
Softwood	178	9	2	40	108	19
Hardwood	172	11	--	161	--	--
Total	350	20	2	201	108	19
ALL MATERIAL	3,334	312	126	2,769	108	19

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Chippable mill residues such as slabs, edgings, etc. Roundwood chips are included in roundwood.

Table 11.--Saw-log production and receipts in Wisconsin by species group, 1988 and 1990

(In thousand board feet) 1/

Species group	Production			Receipts		
	1988	1990	Change	1988	1990	Change
SOFTWOODS						
Cedar	1,218	1,157	-61	1,202	1,401	199
Balsam fir	1,674	357	-1,317	1,890	452	-1,438
Hemlock	9,318	8,958	-360	9,502	9,129	-373
Jack pine	10,368	5,632	-4,736	7,892	7,364	-528
Red pine	28,793	33,890	5,097	25,082	37,992	12,910
White pine	36,679	28,286	-8,393	37,681	30,231	-7,450
Spruce	347	339	-8	489	380	-109
Tamarack	12	31	19	12	243	231
Total	88,409	78,650	-9,759	83,750	87,192	3,442
HARDWOODS						
Ash	16,838	18,200	1,362	17,523	18,913	1,390
Aspen	100,782	90,379	-10,403	109,365	99,532	-9,833
Balsam poplar	437	294	-143	638	346	-292
Basswood	33,770	33,734	-36	36,212	38,942	2,730
Beech	1,551	954	-597	1,546	951	-595
Paper birch	14,912	18,868	3,956	15,382	20,370	4,988
Yellow birch	5,505	9,432	3,927	6,310	10,430	4,120
Cottonwood	1,177	755	-422	1,105	648	-457
Elm	4,441	4,357	-84	4,746	4,435	-311
Hickory	1,657	1,965	308	1,636	1,845	209
Hard maple	58,506	68,789	10,283	63,367	75,564	12,197
Soft maple	27,962	35,998	8,036	28,047	37,541	9,494
Red oak	173,129	175,097	1,968	173,138	175,957	2,819
White oak	43,028	42,907	-121	44,275	43,034	-1,241
Walnut	2,074	549	-1,525	2,168	631	-1,537
Other hardwoods	1,974	2,664	690	2,098	2,752	654
Total	487,743	504,942	17,199	507,556	531,891	24,335
All species	576,152	583,592	7,440	591,306	619,083	27,777

1/ International 1/4-inch rule.

Table 12.--Saw-log production by Forest Survey Unit, species group, and State of destination, Wisconsin, 1990

(Thousand board feet) 1/

Species	Total	Wisconsin	Michigan	Minnesota	Other States
			ALL UNITS		
SOFTWOODS					
Cedar	1,157	1,077	80	--	--
Balsam fir	357	355	2	--	--
Hemlock	8,958	8,958	--	--	--
Jack pine	5,632	4,704	--	928	--
Red pine	33,890	32,602	69	1,219	--
White pine	28,286	27,444	13	829	--
Spruce	339	327	4	8	--
Tamarack	31	31	--	--	--
Total	78,650	75,498	168	2,984	--
HARDWOODS					
Ash	18,200	18,014	20	10	156
Aspen	90,379	90,070	267	42	--
Balsam poplar	294	294	--	--	--
Basswood	33,734	32,728	462	16	528
Beech	954	951	3	--	--
White birch	18,868	18,718	147	3	--
Yellow birch	9,432	9,398	34	--	--
Cottonwood	755	626	--	--	129
Elm	4,357	4,342	--	5	10
Hickory	1,965	1,806	--	5	154
Hard maple	68,789	68,283	323	4	179
Soft maple	35,998	35,571	168	3	256
Red oak	175,097	168,552	3,555	122	2,868
White oak	42,907	41,785	--	--	1,122
Walnut	549	549	--	--	--
Other hardwoods	2,664	2,631	--	--	33
Total	504,942	494,318	4,979	210	5,435
All species	583,592	569,816	5,147	3,194	5,435
			NORTHEAST UNIT		
SOFTWOODS					
Cedar	454	374	80	--	--
Balsam fir	200	198	2	--	--
Hemlock	8,569	8,569	--	--	--
Jack pine	3,809	3,809	--	--	--
Red pine	15,104	15,035	69	--	--
White pine	11,828	11,815	13	--	--
Spruce	239	235	4	--	--
Tamarack	18	18	--	--	--
Total	40,221	40,053	168	--	--
HARDWOODS					
Ash	6,987	6,967	20	--	--
Aspen	47,956	47,689	267	--	--
Balsam poplar	112	112	--	--	--
Basswood	12,674	12,212	462	--	--
Beech	492	489	3	--	--
White birch	13,749	13,602	147	--	--
Yellow birch	4,554	4,520	34	--	--
Cottonwood	35	35	--	--	--
Elm	1,884	1,884	--	--	--
Hickory	269	269	--	--	--
Hard maple	35,923	35,600	323	--	--
Soft maple	15,061	14,893	168	--	--
Red oak	19,285	15,730	3,555	--	--
White oak	1,071	1,071	--	--	--
Walnut	--	--	--	--	--
Other hardwoods	402	402	--	--	--
Total	160,454	155,475	4,979	--	--
All species	200,675	195,528	5,147	--	--

(Table 12 continued on next page)

(Table 12 continued)

Species	Total	Wisconsin	Michigan	Minnesota	Other States
		NORTHWEST UNIT			
SOFTWOODS					
Cedar	32	32	--	--	--
Balsam fir	144	144	--	--	--
Hemlock	38	38	--	--	--
Jack pine	1,486	558	--	928	--
Red pine	12,567	11,348	--	1,219	--
White pine	7,397	6,568	--	829	--
Spruce	79	71	--	8	--
Tamarack	1	1	--	--	--
Total	21,744	18,760	--	2,984	--
HARDWOODS					
Ash	3,037	3,029	--	8	--
Aspen	23,857	23,815	--	42	--
Balsam poplar	3	3	--	--	--
Basswood	8,124	8,113	--	11	--
Beech	--	--	--	--	--
White birch	3,873	3,870	--	3	--
Yellow birch	4,350	4,350	--	--	--
Cottonwood	1	1	--	--	--
Elm	619	619	--	--	--
Hickory	101	101	--	--	--
Hard maple	12,497	12,493	--	4	--
Soft maple	4,841	4,841	--	--	--
Red oak	26,494	26,452	--	42	--
White oak	3,891	3,891	--	--	--
Walnut	--	--	--	--	--
Other hardwoods	155	155	--	--	--
Total	91,843	91,733	--	110	--
All species	113,587	110,493	--	3,094	--
		CENTRAL UNIT			
SOFTWOODS					
Cedar	171	171	--	--	--
Balsam fir	10	10	--	--	--
Hemlock	74	74	--	--	--
Jack pine	326	326	--	--	--
Red pine	3,717	3,717	--	--	--
White pine	5,988	5,988	--	--	--
Spruce	1	1	--	--	--
Tamarack	--	--	--	--	--
Total	10,287	10,287	--	--	--
HARDWOODS					
Ash	2,916	2,915	--	1	--
Aspen	12,668	12,668	--	--	--
Balsam poplar	49	49	--	--	--
Basswood	5,140	5,139	--	1	--
Beech	24	24	--	--	--
White birch	587	587	--	--	--
Yellow birch	378	378	--	--	--
Cottonwood	10	10	--	--	--
Elm	296	295	--	1	--
Hickory	336	335	--	1	--
Hard maple	7,402	7,402	--	--	--
Soft maple	6,326	6,326	--	--	--
Red oak	36,313	36,295	--	18	--
White oak	9,112	9,112	--	--	--
Walnut	4	4	--	--	--
Other hardwoods	510	510	--	--	--
Total	82,071	82,049	--	22	--
All species	92,358	92,336	--	22	--

(Table 12 continued on next page)

(Table 12 continued)

Species	Total	Wisconsin	Michigan	Minnesota	Other States
		SOUTHWEST UNIT			
SOFTWOODS					
Cedar	15	15	--	--	--
Balsam fir	--	--	--	--	--
Hemlock	--	--	--	--	--
Jack pine	9	9	--	--	--
Red pine	2,438	2,438	--	--	--
White pine	1,914	1,914	--	--	--
Spruce	--	--	--	--	--
Tamarack	--	--	--	--	--
Total	4,376	4,376	--	--	--
HARDWOODS					
Ash	3,067	2,910	--	1	156
Aspen	5,306	5,306	--	--	--
Balsam poplar	22	22	--	--	--
Basswood	5,857	5,325	--	4	528
Beech	--	--	--	--	--
White birch	320	320	--	--	--
Yellow birch	46	46	--	--	--
Cottonwood	545	416	--	--	129
Elm	1,390	1,376	--	4	10
Hickory	912	754	--	4	154
Hard maple	8,450	8,271	--	--	179
Soft maple	5,506	5,247	--	3	256
Red oak	80,935	78,005	--	62	2,868
White oak	23,754	22,632	--	--	1,122
Walnut	402	402	--	--	--
Other hardwoods	907	874	--	--	33
Total	137,419	131,906	--	78	5,435
All species	141,795	136,282	--	78	5,435
		SOUTHEAST UNIT			
SOFTWOODS					
Cedar	485	485	--	--	--
Balsam fir	3	3	--	--	--
Hemlock	277	277	--	--	--
Jack pine	2	2	--	--	--
Red pine	64	64	--	--	--
White pine	1,159	1,159	--	--	--
Spruce	20	20	--	--	--
Tamarack	12	12	--	--	--
Total	2,022	2,022	--	--	--
HARDWOODS					
Ash	2,193	2,193	--	--	--
Aspen	592	592	--	--	--
Balsam poplar	108	108	--	--	--
Basswood	1,939	1,939	--	--	--
Beech	438	438	--	--	--
White birch	339	339	--	--	--
Yellow birch	104	104	--	--	--
Cottonwood	164	164	--	--	--
Elm	168	168	--	--	--
Hickory	347	347	--	--	--
Hard maple	4,517	4,517	--	--	--
Soft maple	4,264	4,264	--	--	--
Red oak	12,070	12,070	--	--	--
White oak	5,079	5,079	--	--	--
Walnut	143	143	--	--	--
Other hardwoods	690	690	--	--	--
Total	33,155	33,155	--	--	--
All species	35,177	35,177	--	--	--

1/ International 1/4-inch rule.

Table 13.--Saw-log production by Forest Survey Unit, county, and species group, Wisconsin, 1990

(In thousand board feet) 1/

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	33	15	517	399	918	377	10	2	146	4,701	23	782	--	982
Forest	54	29	800	798	2,298	910	61	3	602	12,611	2	2,706	126	1,750
Langlade	3	16	17	399	860	840	5	2	909	3,025	1	1,884	52	1,567
Lincoln	2	47	10	--	200	459	16	--	838	1,492	0	1,695	35	892
Marinette	75	5	367	17	1,404	507	22	--	1,237	7,020	67	539	28	2,317
Menominee	60	--	6,494	--	86	2,244	--	--	5	1,107	--	1,348	86	162
Oconto	99	9	159	200	3,532	510	59	1	630	8,382	1	729	18	1,285
Oneida	3	40	3	998	3,079	2,900	23	5	914	4,795	5	784	0	2,689
Shawano	114	1	155	--	23	633	--	--	1,210	994	11	1,711	147	223
Vilas	11	38	47	998	2,704	2,448	43	5	496	3,829	2	496	--	1,882
Total	454	200	8,569	3,809	15,104	11,828	239	18	6,987	47,956	112	12,674	492	13,749
NORTHWEST UNIT														
Ashland	27	46	15	--	610	488	27	--	318	304	--	912	--	334
Barron	--	1	--	24	419	1,014	1	--	165	4,429	--	395	--	54
Bayfield	--	28	--	318	2,171	1,463	8	--	153	613	--	511	--	1,061
Burnett	--	--	--	497	666	257	--	--	53	1,045	--	108	--	9
Douglas	1	13	--	311	3,128	470	10	--	57	1,114	--	2	--	191
Iron	--	14	--	199	1,640	437	21	1	287	681	3	516	--	602
Polk	--	--	--	69	234	110	--	--	102	868	--	221	--	23
Price	4	29	10	--	528	39	4	--	465	1,996	--	1,040	--	588
Rusk	--	1	--	--	388	484	1	--	341	3,806	--	1,380	--	165
Sawyer	--	--	8	13	1,486	1,448	--	--	565	3,616	--	1,643	--	214
Taylor	--	10	5	--	59	168	6	--	429	1,164	--	894	--	499
Washburn	--	2	--	55	1,238	1,019	1	--	102	4,221	--	502	--	133
Total	32	144	38	1,486	12,567	7,397	79	1	3,037	23,857	3	8,124	--	3,873
CENTRAL UNIT														
Adams	--	--	--	13	121	290	--	--	15	104	--	8	--	10
Chippewa	1	1	--	--	613	887	--	--	255	4,328	--	547	--	16
Clark	--	--	--	113	773	572	--	--	558	1,512	--	368	--	76
Eau Claire	--	--	--	--	175	429	--	--	48	968	--	93	--	7
Jackson	--	--	--	162	644	629	--	--	97	660	--	326	--	39
Juneau	--	--	--	--	241	331	--	--	223	267	--	459	--	14
Marathon	37	9	72	2	216	1,018	--	--	837	2,768	--	1,828	11	325
Marquette	--	--	--	--	28	65	--	--	--	65	--	0	--	0
Monroe	--	--	--	--	97	291	--	--	70	156	--	128	--	18
Portage	125	--	--	33	285	442	1	--	88	463	--	147	--	18
Waupaca	8	--	2	--	148	285	--	--	369	569	22	800	13	14
Waushara	--	--	--	--	186	270	--	--	41	145	27	54	--	--
Wood	--	--	--	3	190	479	--	--	315	663	--	382	--	50
Total	171	10	74	326	3,717	5,988	1	--	2,916	12,668	49	5,140	24	587

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	--	198	108	--	--	148	1,069	--	632	--	76
Crawford	--	--	--	--	12	175	--	--	267	187	--	420	--	24
Dunn	--	--	--	--	1,159	564	--	--	622	994	--	530	--	7
Grant	--	--	--	--	4	11	--	--	254	63	--	387	--	0
Iowa	12	--	--	--	2	30	--	--	192	82	--	352	--	2
Lacrosse	--	--	--	--	65	159	--	--	126	117	--	247	--	22
Lafayette	--	--	--	--	--	--	--	--	60	2	--	110	--	--
Pepin	1	--	--	--	18	10	--	--	174	312	--	227	--	15
Pierce	--	--	--	--	--	5	--	--	106	352	--	598	--	11
Richland	--	--	--	--	10	197	--	--	355	494	22	604	--	15
St. Croix	--	--	--	9	645	117	--	--	103	463	--	370	--	11
Sauk	2	--	--	--	65	271	--	--	369	480	--	541	--	15
Trempealeau	--	--	--	--	249	132	--	--	108	455	--	142	--	109
Vernon	--	--	--	--	11	135	--	--	183	236	--	697	--	13
Total	15	--	--	9	2,438	1,914	--	--	3,067	5,306	22	5,857	--	320
SOUTHEAST UNIT														
Brown	--	--	54	--	--	34	--	--	200	45	--	43	57	45
Calumet	--	--	--	--	--	5	--	--	19	29	5	84	22	5
Columbia	--	--	--	--	5	198	--	--	75	111	--	138	--	13
Dane	15	--	--	--	--	2	--	--	12	13	--	45	--	--
Dodge	4	--	--	--	--	--	--	--	3	1	--	80	--	--
Door	116	3	63	--	55	228	18	11	85	63	11	89	89	220
Fond du Lac	--	--	--	--	--	--	--	--	7	--	--	74	1	--
Green	--	--	--	--	--	3	1	--	28	27	5	36	--	--
Green Lake	--	--	--	--	--	--	--	--	--	--	--	54	--	--
Jefferson	3	--	--	--	--	--	--	--	46	--	--	67	13	--
Kenosha	--	--	--	--	--	--	1	--	--	--	--	4	--	--
Kewaunee	74	--	51	--	3	34	--	1	139	38	--	32	86	33
Manitowoc	264	--	109	2	--	296	--	--	472	147	76	317	84	17
Outagamie	--	--	--	--	--	24	--	--	140	82	11	139	2	1
Ozaukee	1	--	--	--	--	--	--	--	163	--	--	139	7	--
Racine	3	--	--	--	--	--	--	--	--	--	--	4	--	--
Rock	--	--	--	--	1	--	--	--	14	--	--	4	--	--
Sheboygan	5	--	--	--	--	54	--	--	571	32	--	229	71	5
Walworth	--	--	--	--	--	--	--	--	--	--	--	6	--	--
Washington	--	--	--	--	--	281	--	--	187	--	--	282	6	--
Waukesha	--	--	--	--	--	--	--	--	32	--	--	73	--	--
Winnebago	--	--	--	--	--	--	--	--	--	4	--	--	--	--
Total	485	3	277	2	64	1,159	20	12	2,193	592	108	1,939	438	339
State total	1,157	357	8,958	5,632	33,890	28,286	339	31	18,200	90,379	294	33,734	954	18,868

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	350	--	6	--	2,573	513	830	240	--	14	13,431
Forest	860	--	234	16	6,055	1,901	1,321	20	--	59	33,216
Langlade	435	--	301	22	4,863	1,936	2,038	41	--	58	19,274
Lincoln	571	--	188	14	2,316	1,532	1,606	110	--	27	12,050
Marinette	29	3	5	4	2,815	2,248	3,775	82	--	9	22,575
Menominee	1,080	--	248	22	5,405	238	653	65	--	43	19,346
Oconto	89	32	61	4	2,068	2,417	2,367	68	--	11	22,731
Oneida	566	--	528	44	3,613	1,962	1,867	52	--	2	24,872
Shawano	225	--	75	123	4,053	1,276	3,535	373	--	176	15,058
Vilas	349	--	238	20	2,162	1,038	1,293	20	--	3	18,122
Total	4,554	35	1,884	269	35,923	15,061	19,285	1,071	--	402	200,675
NORTHWEST UNIT											
Ashland	348	--	74	6	1,474	399	2,779	260	--	5	8,426
Barron	205	--	28	12	365	271	3,695	786	--	5	11,869
Bayfield	644	--	2	--	695	107	2,817	5	--	--	10,596
Burnett	148	--	17	1	89	62	1,363	225	--	1	4,541
Douglas	572	--	--	--	134	31	812	--	--	--	6,846
Iron	168	--	178	15	1,273	535	482	22	--	4	7,078
Polk	9	1	36	1	197	157	2,542	494	--	2	5,066
Price	289	--	76	6	1,698	944	876	30	--	14	8,636
Rusk	274	--	17	15	1,982	527	3,790	1,066	--	26	14,263
Sawyer	862	--	18	27	2,538	646	3,923	539	--	86	17,632
Taylor	164	--	160	14	1,570	1,037	1,506	187	--	11	7,883
Washburn	667	--	13	4	482	125	1,909	277	--	1	10,751
Total	4,350	1	619	101	12,497	4,841	26,494	3,891	--	155	113,587
CENTRAL UNIT											
Adams	--	4	1	16	67	87	843	150	--	16	1,745
Chippewa	44	--	11	5	478	573	2,313	833	--	102	11,007
Clark	81	--	69	5	641	969	3,789	1,011	--	39	10,576
Eau Claire	--	--	5	2	108	159	1,543	717	--	4	4,258
Jackson	--	--	9	19	301	202	4,524	1,213	--	35	8,860
Juneau	23	6	49	105	394	414	5,731	1,661	--	88	10,006
Marathon	196	--	75	87	3,068	1,602	4,958	1,101	--	84	18,294
Marquette	--	--	--	32	90	55	799	100	--	32	1,266
Monroe	--	--	27	44	226	172	4,167	1,015	4	62	6,477
Portage	4	--	4	--	324	430	1,099	131	--	2	3,596
Waupaca	16	--	8	3	884	578	2,072	405	--	11	6,207
Waushara	--	--	--	--	333	301	922	78	--	0	2,357
Wood	14	--	38	18	488	784	3,553	697	--	35	7,709
Total	378	10	296	336	7,402	6,326	36,313	9,112	4	510	92,358

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	180	89	102	334	732	11,453	2,950	1	64	18,136
Crawford	--	--	174	54	1,034	407	6,939	2,507	70	63	12,333
Dunn	14	2	80	60	817	892	4,833	1,035	--	83	11,692
Grant	--	23	144	60	941	224	5,468	1,941	69	52	9,641
Iowa	--	1	130	65	673	143	3,544	1,771	84	85	7,168
Lacrosse	--	109	83	90	186	441	7,979	1,974	33	54	11,685
Lafayette	--	--	40	7	211	28	806	371	30	25	1,690
Pepin	--	20	40	33	280	636	3,030	660	--	19	5,475
Pierce	8	14	85	76	387	146	3,077	811	--	47	5,723
Richland	--	1	185	123	1,572	529	5,383	2,086	58	77	11,711
St. Croix	24	--	57	47	289	77	1,209	397	--	24	3,842
Sauk	--	1	118	64	694	730	7,294	2,475	20	111	13,250
Trempealeau	--	141	30	28	77	164	9,787	1,900	3	79	13,404
Vernon	--	53	135	103	955	357	10,133	2,876	34	124	16,045
Total	46	545	1,390	912	8,450	5,506	80,935	23,754	402	907	141,795
SOUTHEAST UNIT											
Brown	1	76	--	--	191	121	166	55	--	22	1,110
Calumet	--	--	3	12	205	237	252	157	8	36	1,079
Columbia	--	--	12	33	169	152	1,528	503	6	34	2,977
Dane	--	4	15	34	68	38	930	601	28	77	1,882
Dodge	--	--	1	43	90	94	506	470	4	55	1,351
Door	70	14	2	1	292	198	248	11	1	5	1,893
Fond du Lac	--	1	5	12	127	146	242	130	8	38	791
Green	--	--	28	2	108	43	868	454	26	37	1,666
Green Lake	--	--	--	10	108	100	717	109	--	10	1,108
Jefferson	4	3	3	34	218	28	536	290	--	34	1,279
Kenosha	--	--	6	2	5	2	42	71	2	6	141
Kewaunee	11	11	22	--	220	432	113	24	--	22	1,346
Manitowoc	9	25	5	41	690	1,014	945	367	11	60	4,951
Outagamie	1	--	1	--	252	204	486	106	--	71	1,520
Ozaukee	4	3	--	23	268	259	420	106	5	36	1,434
Racine	--	2	2	2	6	--	64	77	2	6	168
Rock	--	--	23	20	27	--	638	369	12	22	1,130
Sheboygan	4	6	22	43	833	821	1,594	385	9	48	4,732
Walworth	--	11	3	3	8	--	70	98	3	9	211
Washington	--	3	7	25	428	288	978	420	8	42	2,955
Waukesha	--	--	8	7	117	49	361	269	10	20	946
Winnebago	--	5	--	--	87	38	366	7	--	--	507
Total	104	164	168	347	4,517	4,264	12,070	5,079	143	690	35,177
State total	9,432	755	4,357	1,965	68,789	35,998	175,097	42,907	549	2,664	583,592

1/ International 1/4-inch rule.

Table 14.--Saw-log receipts in Wisconsin by Forest Survey Unit, species group, and State of origin, 1990

(In thousand board feet) 1/

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
ALL UNITS						
SOFTWOODS						
Cedar	1,401	1,077	287	37	--	--
Balsam fir	452	355	97	--	--	--
Hemlock	9,129	8,958	171	--	--	--
Jack pine	7,364	4,704	2,660	--	--	--
Red pine	37,992	32,602	5,328	62	--	--
White pine	30,231	27,444	2,787	--	--	--
Spruce	380	327	53	--	--	--
Tamarack	243	31	212	--	--	--
Total	87,192	75,498	11,595	99	--	--
HARDWOODS						
Ash	18,913	18,014	730	130	25	14
Aspen	99,532	90,070	9,407	55	--	--
Balsam poplar	346	294	52	--	--	--
Basswood	38,942	32,728	5,627	537	50	--
Beech	951	951	--	--	--	--
White birch	20,370	18,718	1,652	--	--	--
Yellow birch	10,430	9,398	992	40	--	--
Cottonwood	648	626	--	22	--	--
Elm	4,435	4,342	--	71	--	22
Hickory	1,845	1,806	--	39	--	--
Hard maple	75,564	68,283	6,854	327	100	--
Soft maple	37,541	35,571	1,671	299	--	--
Red oak	175,957	168,552	1,915	4,605	338	547
White oak	43,034	41,785	--	885	107	257
Walnut	631	549	--	38	38	6
Other hardwoods	2,752	2,631	51	56	--	14
Total	531,891	494,318	28,951	7,104	658	860
All species	619,083	569,816	40,546	7,203	658	860
NORTHEAST UNIT						
SOFTWOODS						
Cedar	414	377	37	--	--	--
Balsam fir	274	177	97	--	--	--
Hemlock	7,663	7,492	171	--	--	--
Jack pine	6,668	4,008	2,660	--	--	--
Red pine	16,429	12,310	4,119	--	--	--
White pine	14,956	12,169	2,787	--	--	--
Spruce	298	245	53	--	--	--
Tamarack	31	19	12	--	--	--
Total	46,733	36,797	9,936	--	--	--
HARDWOODS						
Ash	9,075	8,361	714	--	--	--
Aspen	53,082	43,675	9,407	--	--	--
Balsam poplar	151	99	52	--	--	--
Basswood	16,168	14,814	1,354	--	--	--
Beech	565	565	0	--	--	--
White birch	16,699	15,047	1,652	--	--	--
Yellow birch	5,811	5,008	803	--	--	--
Cottonwood	31	31	--	--	--	--
Elm	2,209	2,209	--	--	--	--
Hickory	444	444	--	--	--	--
Hard maple	46,860	41,225	5,635	--	--	--
Soft maple	18,727	17,234	1,493	--	--	--
Red oak	23,953	22,066	1,887	--	--	--
White oak	2,148	2,148	--	--	--	--
Other hardwoods	589	538	51	--	--	--
Total	196,512	173,464	23,048	--	--	--
All species	243,245	210,261	32,984	--	--	--

(Table 14 continued on next page)

(Table 14 continued)

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
			NORTHWEST UNIT			
SOFTWOODS						
Cedar	69	32	--	37	--	--
Balsam fir	138	138	--	--	--	--
Hemlock	5	5	--	--	--	--
Jack pine	368	368	--	--	--	--
Red pine	15,479	14,208	1,209	62	--	--
White pine	2,754	2,754	--	--	--	--
Spruce	57	57	--	--	--	--
Tamarack	200	--	200	--	--	--
Total	19,070	17,562	1,409	99	--	--
HARDWOODS						
Ash	1,782	1,782	--	--	--	--
Aspen	21,711	21,711	--	--	--	--
Balsam poplar	9,553	5,283	4,270	--	--	--
Basswood	2,212	2,212	--	--	--	--
Beech	--	--	--	--	--	--
White birch	3,805	3,616	189	--	--	--
Yellow birch	1	1	--	--	--	--
Cottonwood	124	124	--	--	--	--
Elm	63	63	--	--	--	--
Hard maple	9,080	7,861	1,219	--	--	--
Soft maple	2,777	2,599	178	--	--	--
Red oak	19,827	19,799	28	--	--	--
White oak	2,025	2,025	--	--	--	--
Other hardwoods	97	97	--	--	--	--
Total	73,057	67,173	5,884	--	--	--
All species	92,127	84,735	7,293	99	--	--
			CENTRAL UNIT			
SOFTWOODS						
Cedar	172	172	--	--	--	--
Balsam fir	37	37	--	--	--	--
Hemlock	1,152	1,152	--	--	--	--
Jack pine	326	326	--	--	--	--
Red pine	3,550	3,550	--	--	--	--
White pine	8,270	8,270	--	--	--	--
Spruce	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Total	13,507	13,507	--	--	--	--
HARDWOODS						
Ash	2,924	2,886	16	22	--	--
Aspen	15,362	15,362	--	--	--	--
Basswood	4,135	4,097	3	35	--	--
Beech	--	--	--	--	--	--
White birch	674	674	--	--	--	--
Yellow birch	678	678	--	--	--	--
Cottonwood	10	10	--	--	--	--
Elm	306	306	--	--	--	--
Hickory	376	376	--	--	--	--
Hard maple	5,976	5,976	--	--	--	--
Soft maple	6,916	6,873	--	43	--	--
Red oak	30,767	30,745	--	22	--	--
White oak	7,266	7,266	--	--	--	--
Walnut	202	126	--	38	38	--
Other hardwoods	508	508	--	--	--	--
Total	76,100	75,883	19	160	38	--
All species	89,607	89,390	19	160	38	--

(Table 14 continued on next page)

(Table 14 continued)

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
		SOUTHWEST UNIT				
SOFTWOODS						
Cedar	15	15	--	--	--	--
Jack pine	--	--	--	--	--	--
Red pine	1,529	1,529	--	--	--	--
White pine	2,370	2,370	--	--	--	--
Total	3,914	3,914	--	--	--	--
HARDWOODS						
Ash	2,823	2,690	--	108	25	--
Aspen	4,169	4,114	--	55	--	--
Basswood	5,704	5,152	--	502	50	--
White birch	332	332	--	--	--	--
Yellow birch	84	44	--	40	--	--
Cottonwood	438	416	--	22	--	--
Elm	1,465	1,394	--	71	--	--
Hickory	692	653	--	39	--	--
Hard maple	8,324	7,897	--	327	100	--
Soft maple	5,150	4,894	--	256	--	--
Red oak	88,167	83,119	--	4,583	338	127
White oak	24,447	23,408	--	885	107	47
Walnut	269	263	--	--	--	6
Other hardwoods	895	839	--	56	--	--
Total	142,959	135,215	--	6,944	620	180
All species	146,873	139,129	--	6,944	620	180
		SOUTHEAST UNIT				
SOFTWOODS						
Cedar	731	481	250	--	--	--
Balsam fir	3	3	--	--	--	--
Hemlock	309	309	--	--	--	--
Jack pine	2	2	--	--	--	--
Red pine	1,005	1,005	--	--	--	--
White pine	1,881	1,881	--	--	--	--
Spruce	25	25	--	--	--	--
Tamarack	12	12	--	--	--	--
Total	3,968	3,718	250	--	--	--
HARDWOODS						
Ash	2,309	2,295	--	--	--	14
Aspen	5,208	5,208	--	--	--	--
Balsam poplar	195	195	--	--	--	--
Basswood	3,382	3,382	--	--	--	--
Beech	386	386	--	--	--	--
White birch	453	453	--	--	--	--
Yellow birch	52	52	--	--	--	--
Cottonwood	168	168	--	--	--	--
Elm	331	309	--	--	--	22
Hickory	270	270	--	--	--	--
Hard maple	5,324	5,324	--	--	--	--
Soft maple	3,971	3,971	--	--	--	--
Red oak	13,243	12,823	--	--	--	420
White oak	7,148	6,938	--	--	--	210
Walnut	160	160	--	--	--	--
Other hardwoods	663	649	--	--	--	14
Total	43,263	42,583	--	--	--	680
All species	47,231	46,301	250	--	--	680

1/ International 1/4-inch rule.

Table 15.--Veneer log production and receipts in Wisconsin for selected years, 1946-1990

(In thousand board feet) 1/

Year	Production	Receipts
1946	29,267	68,116
1948	32,026	71,791
1950	26,652	62,935
1952	29,956	59,500
1954	27,109	59,573
1956	30,403	66,949
1958	23,740	43,063
1960	25,467	51,298
1963	21,919	37,517
1965	25,203	41,918
1966	23,782	43,104
1968	22,867	42,162
1969	21,037	37,571
1970	15,814	29,896
1972	19,465	36,491
1974	32,224	37,804
1975	37,342	41,605
1976	31,692	33,294
1977	31,685	36,971
1978	20,863	27,903
1980	27,250	34,540
1984	22,989	33,403
1986	26,203	37,607
1988	42,678	42,618
1990	44,227	44,177

1/ International 1/4-inch rule.

Table 16.--Veneer log production and receipts by species group in Wisconsin, 1988 and 1990

(In thousand board feet) 1/

Species group	Production			Receipts		
	1988	1990	Change	1988	1990	Change
SOFTWOODS						
Cedar	--	--	--	--	--	--
Balsam fir	99	--	-99	--	--	--
Hemlock	162	--	-162	--	--	--
Jack pine	1,007	--	-1,007	--	--	--
Red pine	2,140	893	-1,247	--	--	--
White pine	1,856	1,919	63	270	198	-72
Spruce	546	4,150	3,604	--	--	--
Tamarack	24	423	399	--	--	--
Total	5,834	7,385	1,551	270	198	-72
HARDWOODS						
Ash	280	89	-191	549	239	-310
Aspen	12,496	11,211	-1,285	2,430	2,427	-3
Balsam poplar	--	--	--	--	19	19
Basswood	4,134	3,515	-619	6,568	5,341	-1,227
Beech	6	4	-2	532	282	-250
White birch	243	281	38	333	375	42
Yellow birch	421	285	-136	1,277	834	-443
Cottonwood	262	279	17	632	477	-155
Elm	2	1	-1	2	1	-1
Hickory	22	29	22	22	33	11
Hard maple	3,269	4,105	836	9,448	12,559	3,111
Soft maple	1,140	374	-766	2,505	1,218	-1,287
Red oak	13,161	14,271	1,110	16,615	16,907	292
White oak	1,388	2,361	973	1,414	3,015	1,601
Walnut	--	19	19	--	5	5
Other hardwoods	20	18	-2	21	247	226
Total	36,844	36,842	13	42,348	43,979	1,631
All species	42,678	44,227	1,564	42,618	44,177	1,559

1/ International 1/4-inch rule.

Table 17.--Veneer log and bolt production in Wisconsin by species and State or country of destination, 1990

(In thousand board feet) 1/

Species	Total	Destination			
		Wisconsin	Michigan	Indiana	Other
SOFTWOODS					
Cedar	--	--	--	--	--
Balsam fir	--	--	--	--	--
Hemlock	--	--	--	--	--
Jack pine	--	--	--	--	--
Red pine	893	--	893	--	--
White pine	1,919	62	1,857	--	--
Spruce	4,150	--	4,150	--	--
Tamarack	423	--	423	--	--
Total	7,385	62	7,323	--	--
HARDWOODS					
Ash	89	86	3	--	--
Aspen	11,211	2,187	9,024	--	--
Balsam poplar	--	--	--	--	--
Basswood	3,515	3,515	--	--	--
Beech	4	4	--	--	--
White birch	281	253	28	--	--
Yellow birch	285	209	76	--	--
Cottonwood	279	279	--	--	--
Elm	1	1	--	--	--
Hickory	29	6	--	23	--
Hard maple	4,105	3,589	506	--	10
Soft maple	374	374	--	--	--
Red oak	14,271	14,115	50	68	38
White oak	2,361	2,275	86	--	--
Walnut	19	5	8	6	--
Other hardwoods	18	12	6	--	--
Total	36,842	26,910	9,787	97	48
All species	44,227	26,972	17,110	97	48

1/ International 1/4-inch rule.

Table 18.--Veneer log receipts in Wisconsin by area of origin for selected years, 1946-1990

(In thousand board feet) 1/

Year	All areas	Area of origin				
		Wisconsin	Michigan	Minnesota	Other States	2/ Canada
1946	68,116	28,813	33,834	1,139	919	3,411
1948	71,791	31,553	27,052	4,811	1,066	7,309 3/
1950	62,935	26,198	19,917	4,919	924	10,977 3/
1952	59,500	28,899	15,775	5,826	1,516	7,484
1954	59,573	26,527	15,537	7,962	3,286	6,261
1956	66,949	30,298	18,932	7,221	3,405	7,093
1958	43,063	23,488	8,078	7,027	916	3,554
1960	51,298	24,249	8,659	8,380	5,207	4,803
1963	37,517	18,846	4,950	6,177	2,777	4,767
1965	41,918	23,788	5,918	6,148	1,726	4,338
1966	43,104	22,547	8,044	6,111	1,621	4,781
1968	42,162	20,458	8,265	5,207	2,642	5,590
1969	37,571	18,853	8,001	3,518	2,679	4,520
1970	29,896	15,148	7,347	2,951	1,747	2,703
1972	36,491	18,172	10,893	3,457	1,552	2,417
1974	37,804	19,643	10,922	4,083	1,950	1,206
1975	41,605	24,294	10,221	3,486	1,905	1,699
1976	33,294	20,379	9,009	2,136	1,567	203
1977	36,971	20,752	10,280	3,033	2,412	494
1978	27,903	14,299	9,029	2,468	1,587	520
1980	34,540	14,245	14,058	2,501	3,008	728
1984	33,403	20,575	9,385	2,079	1,225	139
1986	37,607	23,098	13,036	758	627	88
1988	42,618	26,030	12,550	2,929	1,092	17
1990	44,177	26,972	14,368	1,712	642	483

1/ International 1/4-inch rule.

2/ Includes only logs and bolts shipped to Canadian mills for processing.

3/ Includes nominal quantities from other countries.

Table 19.--Veneer log and bolt receipts in Wisconsin by species group and area of origin, 1990

(In thousand board feet) 1/

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois	Canada	Other States
SOFTWOODS								
White pine	198	62	125	11	--	--	--	--
Total	198	62	125	11	--	--	--	--
HARDWOODS								
Ash	239	86	150	3	--	--	--	--
Aspen	2,427	2,187	206	34	--	--	--	--
Balsam poplar	19	--	--	19	--	--	--	--
Basswood	5,341	3,515	1,256	570	--	--	--	--
Beech	282	4	278	--	--	--	--	--
White birch	375	253	118	4	--	--	--	--
Yellow birch	834	209	625	--	--	--	--	--
Cottonwood	477	279	--	198	--	--	--	--
Elm	1	1	--	--	--	--	--	--
Hickory	33	6	7	--	10	10	--	--
Hard maple	12,559	3,589	8,892	78	--	--	--	--
Soft maple	1,218	374	821	23	--	--	--	--
Red oak	16,907	14,115	1,736	490	33	--	483	50
White oak	3,015	2,275	75	282	324	59	--	--
Walnut	5	5	--	--	--	--	--	--
Other hardwoods	247	12	79	--	--	--	--	156
Total	43,979	26,910	14,243	1,701	367	69	483	206
All species	44,177	26,972	14,368	1,712	367	69	483	206

1/ International 1/4-inch rule.

Table 20.--Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1990

(In thousand cubic feet)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
NORTHEAST UNIT														
Florence	10	349	269	397	375	90	153	11	80	3,513	7	177	10	850
Forest	12	463	253	527	809	175	420	52	369	5,140	--	540	33	1,219
Langlade	1	187	64	361	505	151	73	12	373	5,037	--	432	16	1,160
Lincoln	--	239	40	173	221	107	99	43	298	3,808	--	444	9	679
Marinette	259	406	129	1,548	1,162	138	252	85	340	7,553	15	232	53	1,967
Menominee	13	21	2,643	64	275	584	2	--	51	1,116	--	257	22	120
Oconto	62	47	37	434	1,219	113	15	1	178	3,521	--	196	6	882
Oneida	1	633	183	1,165	1,583	632	496	77	427	6,084	1	336	2	1,883
Shawano	38	2	86	41	435	126	4	--	263	679	2	338	34	304
Vilas	2	405	72	860	1,011	569	1,007	18	232	4,959	--	211	4	2,160
Total	398	2,752	3,776	5,570	7,595	2,685	2,521	299	2,611	41,410	25	3,163	189	11,224
NORTHWEST UNIT														
Ashland	6	285	24	520	354	141	461	61	243	1,886	--	218	4	958
Barron	--	--	--	27	160	181	23	2	41	3,503	--	141	--	186
Bayfield	--	196	--	1,109	1,128	384	206	20	155	7,823	71	147	2	1,668
Burnett	--	--	--	1,473	865	49	--	--	21	2,790	--	19	--	178
Douglas	--	647	--	2,333	1,149	101	76	3	26	4,032	56	12	--	1,043
Iron	--	60	16	55	318	108	88	2	127	4,344	5	188	4	705
Polk	--	--	--	25	249	25	--	--	23	1,017	--	39	--	11
Price	1	369	72	181	427	57	345	70	354	4,507	--	408	6	1,403
Rusk	--	10	6	94	205	87	37	36	172	3,368	--	373	--	548
Sawyer	--	162	43	241	648	363	270	87	431	6,697	--	429	--	1,857
Taylor	--	256	112	242	208	33	191	60	298	2,549	--	255	8	846
Washburn	--	15	--	948	721	203	11	1	90	4,546	--	134	--	1,022
Total	7	2,000	273	7,248	6,432	1,732	1,708	342	1,981	47,062	132	2,363	24	10,425
CENTRAL UNIT														
Adams	--	29	--	1,453	1,864	160	2	8	32	924	--	9	--	88
Chippewa	--	10	10	149	331	156	14	19	158	2,692	--	188	--	361
Clark	--	--	--	237	467	126	2	--	266	2,579	--	149	4	612
Eau Claire	--	--	--	90	241	86	--	2	36	693	--	41	2	485
Jackson	--	--	--	1,986	865	180	10	2	60	1,355	--	62	--	356
Juneau	--	--	--	1,467	771	101	--	--	64	145	--	85	--	103
Marathon	8	43	98	157	409	213	23	2	290	2,908	--	373	14	428
Marquette	--	2	--	242	758	87	3	2	23	33	--	2	--	81
Monroe	--	--	--	509	541	104	14	--	38	167	--	24	--	95
Portage	28	4	12	302	720	171	3	4	78	688	--	34	4	147
Waupaca	1	2	4	104	617	127	--	--	78	428	3	143	8	15
Waushara	--	--	--	251	1,764	308	2	9	18	122	5	9	4	21
Wood	--	--	--	428	695	172	16	4	123	1,444	--	96	2	229
Total	37	90	124	7,375	10,043	1,991	89	52	1,264	14,178	8	1,215	38	3,021

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	4	82	21	--	--	26	214	--	134	--	13
Crawford	--	--	--	2	4	30	--	--	58	532	--	73	2	3
Dunn	--	--	--	212	699	108	--	--	114	523	--	115	--	28
Grant	--	--	--	1	39	2	--	--	45	12	--	68	--	--
Iowa	2	--	--	2	130	23	--	--	33	16	--	63	--	--
Lacrosse	--	--	--	34	100	31	2	--	22	33	--	43	--	6
Lafayette	--	--	--	--	--	--	--	--	10	--	--	20	--	--
Pepin	--	--	--	21	19	2	--	--	30	61	--	39	--	3
Pierce	--	--	--	21	18	1	10	--	18	73	--	108	--	3
Richland	--	--	--	24	45	35	--	--	61	91	3	110	--	2
St. Croix	--	--	--	20	460	27	--	--	20	339	--	67	--	4
Sauk	--	--	--	59	397	89	--	--	64	97	--	96	--	2
Trempealeau	--	--	--	28	357	74	--	--	23	85	--	26	--	31
Vernon	--	--	--	--	2	23	--	--	32	45	--	121	--	2
Total	2	--	--	428	2,352	466	12	--	556	2,121	3	1,083	2	97
SOUTHEAST UNIT														
Brown	--	--	9	--	20	5	--	--	35	13	--	8	10	8
Calumet	--	--	--	--	2	1	--	--	5	5	1	15	5	1
Columbia	--	--	--	70	303	61	--	--	14	22	--	31	--	13
Dane	3	--	--	--	--	--	--	--	2	2	--	8	--	--
Dodge	1	--	--	--	--	--	--	--	--	--	--	14	--	--
Door	25	1	12	3	9	40	3	2	16	15	2	16	16	38
Fond du Lac	--	--	--	--	16	--	--	--	1	--	--	12	--	5
Green	--	--	--	--	14	--	--	--	6	5	1	7	--	--
Green Lake	--	--	--	3	28	--	--	--	2	2	--	16	--	--
Jefferson	1	--	--	--	--	--	--	--	8	--	--	11	2	--
Kenosha	--	--	--	--	--	--	--	--	--	--	--	1	--	--
Kewaunee	17	--	8	--	--	5	--	--	24	7	--	6	16	7
Manitowoc	58	2	19	--	6	58	--	--	83	27	13	55	21	2
Outagamie	--	--	--	--	19	10	--	--	31	184	2	24	--	--
Ozaukee	--	--	--	1	2	--	--	--	28	--	--	24	1	--
Racine	1	--	--	--	--	--	--	--	--	--	--	1	--	--
Rock	--	--	--	--	--	--	--	--	2	--	--	1	--	--
Sheboygan	1	--	--	--	53	9	--	--	99	6	--	40	12	1
Walworth	--	--	--	--	--	--	--	--	--	--	--	1	--	--
Washington	--	--	--	--	--	49	--	--	33	--	--	49	1	--
Waukesha	--	--	--	--	69	42	--	--	6	--	--	12	--	--
Winnebago	--	--	--	--	--	--	--	--	--	1	--	--	--	--
Total	107	3	48	77	541	280	3	2	395	289	19	352	84	75
State total	551	4,845	4,221	20,698	26,963	7,154	4,333	695	6,807	105,060	187	8,176	337	24,842

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	108	--	9	--	846	329	208	63	--	14	7,868
Forest	268	--	190	2	2,274	1,165	404	84	--	30	14,429
Langlade	169	--	103	3	2,043	992	569	60	--	51	12,362
Lincoln	152	--	97	2	1,130	679	423	41	--	27	8,711
Marinette	267	--	36	1	2,168	1,185	967	44	--	112	18,919
Menominee	209	--	68	3	1,311	287	179	21	--	10	7,256
Oconto	77	6	20	1	818	679	598	16	--	22	8,948
Oneida	176	--	125	8	1,824	1,049	533	80	--	23	17,321
Shawano	94	--	20	21	1,276	484	917	83	--	50	5,297
Vilas	139	--	74	3	1,165	633	369	41	--	22	13,956
Total	1,659	6	742	44	14,855	7,482	5,167	533	--	361	115,067
NORTHWEST UNIT											
Ashland	153	--	68	1	1,185	611	653	108	--	19	7,959
Barron	40	--	6	2	133	79	783	153	--	3	5,463
Bayfield	158	--	16	--	711	487	686	21	--	10	14,998
Burnett	30	--	2	--	71	64	273	45	--	2	5,882
Douglas	107	--	--	--	120	482	170	2	--	4	10,363
Iron	114	--	52	2	861	516	185	5	--	29	7,784
Polk	1	--	11	--	62	37	590	94	--	--	2,184
Price	134	--	59	1	1,559	885	359	64	--	32	11,293
Rusk	80	--	4	6	901	377	870	216	--	21	7,411
Sawyer	244	--	40	5	1,887	927	1,056	170	--	46	15,603
Taylor	104	--	277	2	1,142	840	385	80	--	10	7,898
Washburn	130	--	6	1	357	181	488	59	--	10	8,923
Total	1,295	--	541	20	8,989	5,486	6,498	1,017	--	186	105,761
CENTRAL UNIT											
Adams	8	1	--	2	155	114	297	47	--	6	5,199
Chippewa	44	--	10	15	553	389	723	265	--	26	6,113
Clark	56	--	63	1	664	732	827	247	--	24	7,056
Eau Claire	8	--	19	--	140	151	309	141	--	9	2,453
Jackson	12	--	11	3	328	377	1,144	290	--	21	7,062
Juneau	9	1	13	18	161	160	1,308	366	--	20	4,792
Marathon	108	--	203	16	1,215	819	1,076	231	--	31	8,665
Marquette	6	--	2	6	101	64	839	29	--	6	2,286
Monroe	4	--	9	8	116	101	892	217	1	14	2,854
Portage	25	--	62	--	305	277	885	42	--	10	3,801
Waupaca	14	--	1	--	328	184	435	79	--	10	2,581
Waushara	8	--	--	--	135	94	244	35	--	6	3,035
Wood	21	--	19	2	353	390	776	167	--	11	4,948
Total	323	2	412	71	4,554	3,852	9,755	2,156	1	194	60,845

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	32	18	18	85	128	2,180	589	--	11	3,533
Crawford	8	--	89	9	225	115	1,350	475	12	11	2,978
Dunn	4	--	14	10	170	168	1,063	253	--	14	3,495
Grant	--	3	28	10	184	39	1,038	367	11	9	1,832
Iowa	--	--	23	11	121	26	714	334	16	16	1,530
Lacrosse	--	35	14	45	39	81	1,784	377	7	9	2,882
Lafayette	--	--	7	1	44	8	165	71	8	3	333
Pepin	--	3	7	7	50	113	576	124	--	3	1,058
Pierce	1	2	18	13	88	27	593	153	--	8	1,133
Richland	--	--	32	21	309	91	1,075	441	10	14	2,364
St. Croix	3	--	10	8	55	18	231	75	--	3	1,338
Sauk	--	--	20	11	127	129	1,510	524	3	19	3,147
Trempealeau	--	40	8	8	28	39	1,856	367	--	14	2,980
Vernon	--	26	23	18	175	83	2,014	588	7	21	3,160
Total	14	141	283	188	1,640	1,041	16,147	4,738	72	155	31,541
SOUTHEAST UNIT											
Brown	--	13	--	--	34	27	30	10	--	3	225
Calumet	--	--	--	2	38	48	48	29	1	7	206
Columbia	--	--	2	7	45	31	933	157	1	7	1,897
Dane	--	1	2	7	14	7	178	116	6	14	360
Dodge	--	--	--	8	17	17	98	135	1	10	301
Door	12	2	--	--	50	35	47	2	--	1	347
Fond du Lac	--	--	1	2	26	31	47	27	1	7	176
Green	--	--	8	--	18	8	164	86	5	7	327
Green Lake	--	--	--	1	20	18	137	25	--	1	253
Jefferson	1	--	--	7	48	6	141	54	--	7	288
Kenosha	--	--	1	--	2	--	9	14	--	1	28
Kewaunee	2	2	3	--	38	78	21	4	--	3	239
Manitowoc	1	3	1	8	124	183	195	68	2	10	939
Outagamie	2	--	--	--	73	85	96	22	--	14	562
Ozaukee	1	--	--	3	58	45	119	20	1	7	308
Racine	--	--	--	--	12	--	52	18	--	1	83
Rock	--	--	3	3	4	--	121	69	2	3	208
Sheboygan	1	1	3	8	144	143	301	73	1	9	905
Walworth	--	2	--	--	1	--	13	18	--	1	36
Washington	--	--	1	3	84	50	225	79	1	8	583
Waukesha	--	--	1	1	29	9	107	50	1	3	330
Winnebago	--	1	--	--	20	9	68	1	--	--	100
Total	20	25	24	80	897	828	3,150	1,075	23	124	8,499
State total	3,311	174	2,002	383	30,935	18,887	40,717	9,519	96	1,020	321,713

Table 21.--Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1990

(In thousand board feet) 1/

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
NORTHEAST UNIT														
Florence	35	561	840	741	1,294	411	247	20	208	10,088	24	721	16	1,164
Forest	49	746	986	1,153	2,992	908	697	83	936	17,451	2	2,385	125	1,986
Langlade	3	306	131	696	1,504	820	119	21	1,113	12,738	1	1,797	54	1,749
Lincoln	2	403	81	212	546	494	168	67	950	9,262	--	1,753	33	1,003
Marinette	371	644	477	1,908	3,101	606	409	135	1,304	23,198	61	813	100	3,421
Menominee	54	33	9,136	78	576	2,529	4	--	86	3,037	--	1,233	82	181
Oconto	141	80	173	660	4,552	539	57	3	791	11,966	1	848	24	2,252
Oneida	3	1,024	353	2,064	5,020	3,159	1,091	157	1,200	16,439	4	979	3	2,980
Shawano	120	3	263	50	846	640	6	--	1,127	2,022	10	1,577	137	326
Vilas	10	661	167	1,690	3,704	2,776	1,967	70	653	13,567	2	619	6	2,497
Total	788	4,461	12,607	9,252	24,135	12,882	4,765	556	8,368	119,768	105	12,725	580	17,559
NORTHWEST UNIT														
Ashland	25	477	58	637	1,148	760	1,181	143	577	5,182	--	921	7	739
Barron	--	1	--	49	551	987	38	2	162	11,716	--	738	--	133
Bayfield	--	325	--	1,561	3,714	1,983	1,123	112	310	19,253	115	492	3	1,643
Burnett	--	--	--	2,123	1,916	255	--	--	62	6,723	--	92	--	94
Douglas	1	1,029	--	3,054	4,163	491	126	5	74	9,271	90	22	--	661
Iron	--	101	29	195	1,686	583	387	18	355	10,464	6	579	6	817
Polk	--	--	--	73	531	118	--	--	98	3,217	--	189	--	25
Price	3	601	142	221	1,212	269	870	145	839	11,698	--	1,400	9	1,134
Rusk	--	17	12	116	637	471	59	56	474	10,592	--	1,655	--	395
Sawyer	--	257	90	304	2,269	1,812	927	193	1,022	18,309	--	1,817	1	1,087
Taylor	--	410	216	297	434	171	305	94	723	6,325	--	1,027	13	790
Washburn	--	26	--	1,196	2,164	1,030	19	2	206	13,374	--	650	--	605
Total	29	3,244	547	9,826	20,425	8,930	5,035	770	4,902	126,124	211	9,582	39	8,123
CENTRAL UNIT														
Adams	--	47	--	1,788	3,634	492	2	13	62	2,124	--	21	--	51
Chippewa	1	17	18	182	983	858	22	30	558	9,059	--	944	1	378
Clark	--	--	--	363	1,378	603	3	--	743	6,659	--	660	8	358
Eau Claire	--	--	--	111	569	434	--	2	85	2,050	--	197	2	242
Jackson	--	--	--	2,536	2,058	750	16	3	150	3,350	--	282	1	614
Juneau	--	--	--	1,797	1,624	405	--	--	230	527	--	412	--	61
Marathon	33	72	233	194	915	1,049	38	2	938	7,866	--	1,686	29	453
Marquette	--	3	--	296	1,466	203	5	4	39	104	--	4	--	39
Monroe	--	--	--	623	1,093	386	22	1	102	488	--	110	--	60
Portage	113	7	24	393	1,555	605	6	7	176	1,761	--	136	7	86
Waupaca	7	3	10	128	1,272	423	--	1	331	1,233	18	692	21	18
Waushara	--	--	--	308	3,479	758	3	15	50	342	23	46	7	10
Wood	--	--	2	526	1,442	634	25	6	375	3,637	--	430	5	149
Total	154	149	287	9,245	21,468	7,600	142	84	3,839	39,200	41	5,620	81	2,519

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	15	286	109	--	--	124	1,023	--	662	--	65
Crawford	--	--	--	2	14	169	--	--	244	1,283	--	353	2	21
Dunn	--	--	1	260	1,970	563	--	--	532	1,688	--	580	--	21
Grant	--	--	--	1	76	10	--	--	213	58	--	324	--	--
Iowa	10	--	--	2	251	64	--	--	161	72	--	309	--	2
Lacrosse	--	--	--	49	235	163	4	--	117	173	--	207	--	30
Lafayette	--	--	1	--	--	--	--	--	50	2	--	99	--	--
Pepin	1	--	--	26	49	9	--	--	146	283	--	191	--	13
Pierce	--	1	--	25	35	6	15	--	89	327	--	531	--	10
Richland	--	--	--	30	92	190	--	--	298	437	18	531	--	13
St. Croix	--	--	--	30	1,287	126	--	--	90	977	--	329	--	11
Sauk	2	1	2	73	795	342	--	--	309	444	--	459	--	13
Trempealeau	--	--	--	42	842	223	--	--	96	411	--	124	--	97
Vernon	--	--	--	--	10	130	--	--	156	213	--	586	--	11
Total	13	2	4	555	5,942	2,104	19	--	2,625	7,391	18	5,285	2	307
SOUTHEAST UNIT														
Brown	--	--	52	--	40	33	--	--	170	55	--	38	48	38
Calumet	--	--	--	--	2	5	--	--	18	25	4	70	23	4
Columbia	--	--	--	85	582	241	1	--	65	110	--	153	--	16
Dane	13	--	--	--	--	2	--	--	10	11	--	38	--	--
Dodge	3	--	--	--	--	--	--	--	5	1	--	67	--	--
Door	105	3	61	4	53	220	17	10	71	63	10	75	75	184
Fond du Lac	--	--	--	--	30	--	--	--	6	--	--	62	1	2
Green	--	--	--	--	28	3	1	--	24	23	4	30	--	--
Green Lake	--	--	--	3	53	--	--	--	4	11	--	82	--	--
Jefferson	3	--	--	--	2	--	--	--	39	--	--	56	11	--
Kenosha	--	--	--	--	--	--	1	--	--	--	--	3	--	--
Kewaunee	67	--	49	--	5	33	--	1	117	34	--	27	72	28
Manitowoc	240	2	106	2	12	298	--	--	400	130	64	265	80	14
Outagamie	--	--	--	--	37	36	--	--	128	449	10	117	3	1
Ozaukee	1	--	--	1	3	--	--	--	136	--	--	117	5	--
Racine	3	--	--	--	1	--	--	--	1	--	--	3	--	--
Rock	--	--	--	--	1	--	--	--	12	--	--	3	--	--
Sheboygan	4	--	--	--	102	52	--	--	478	28	--	192	60	4
Walworth	--	--	--	--	--	--	--	--	--	--	--	5	--	--
Washington	--	--	--	--	--	271	--	--	157	--	--	236	5	--
Waukesha	--	--	--	--	131	82	--	--	27	--	--	61	--	--
Winnebago	--	--	--	--	2	--	--	--	1	3	--	--	1	--
Total	439	5	268	95	1,084	1,276	20	11	1,869	943	92	1,700	384	291
State total	1,423	7,861	13,713	28,973	73,054	32,792	9,981	1,421	21,603	293,426	467	34,912	1,086	28,799

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	381	--	18	--	3,576	908	910	266	--	32	22,461
Forest	977	--	439	13	9,172	3,264	1,621	205	--	83	46,273
Langlade	524	--	334	19	8,084	2,930	2,440	159	1	115	35,658
Lincoln	564	--	262	12	4,224	2,100	1,875	148	--	60	24,219
Marinette	466	2	59	3	7,522	3,519	4,419	186	--	187	52,911
Menominee	949	--	250	18	6,367	697	847	92	--	42	26,291
Oconto	181	27	67	3	3,425	2,697	2,958	75	--	43	31,563
Oneida	600	--	498	37	6,715	3,037	2,184	205	--	42	47,794
Shawano	281	--	77	106	5,851	1,659	4,593	398	2	183	20,277
Vilas	456	--	251	16	4,251	1,759	1,563	104	--	38	36,827
Total	5,379	29	2,255	227	59,187	22,570	23,410	1,838	3	825	344,274
NORTHWEST UNIT											
Ashland	473	--	153	5	4,030	1,404	3,000	379	--	33	21,332
Barron	178	--	24	10	551	296	3,982	767	--	7	20,192
Bayfield	603	--	21	--	2,040	953	3,329	50	--	16	37,646
Burnett	129	--	14	1	237	128	1,355	219	--	3	13,351
Douglas	493	--	2	--	395	715	818	5	--	5	21,420
Iron	285	--	179	13	2,836	1,264	675	26	--	52	20,556
Polk	9	1	37	1	306	156	3,040	479	--	2	8,282
Price	379	--	138	5	5,151	2,209	1,305	160	--	61	27,951
Rusk	284	--	18	36	3,420	1,013	4,199	1,050	--	47	24,551
Sawyer	874	--	75	23	6,399	2,148	4,778	673	--	121	43,179
Taylor	262	--	540	12	3,915	2,168	1,684	275	--	23	19,684
Washburn	584	--	18	3	1,211	421	2,411	287	--	16	24,223
Total	4,553	1	1,219	109	30,491	12,875	30,576	4,370	--	386	282,367
CENTRAL UNIT											
Adams	13	3	2	13	461	266	1,111	185	--	19	10,307
Chippewa	176	--	23	106	2,008	1,500	3,915	1,481	--	98	22,358
Clark	135	--	141	4	2,137	1,928	3,901	1,094	--	60	20,175
Eau Claire	13	--	32	2	441	378	1,512	700	--	16	6,786
Jackson	19	--	23	16	1,241	841	5,142	1,324	--	51	18,417
Juneau	28	5	49	88	628	528	6,145	1,806	--	81	14,414
Marathon	287	--	374	74	4,827	2,408	5,311	1,108	1	98	27,996
Marquette	9	--	2	27	325	156	4,024	121	--	28	6,855
Monroe	7	--	28	37	459	285	4,458	1,090	3	57	9,309
Portage	43	--	102	--	995	756	4,184	162	--	18	11,136
Waupaca	34	--	8	3	1,435	653	2,191	396	1	24	8,902
Waushara	14	--	--	--	526	334	1,133	119	--	9	7,176
Wood	44	--	51	15	1,204	1,158	3,762	748	--	36	14,249
Total	822	8	835	385	16,687	11,191	46,789	10,334	5	595	178,080

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	151	78	88	345	820	11,017	3,001	1	54	17,835
Crawford	10	--	208	45	1,093	428	8,839	2,401	58	53	13,223
Dunn	14	2	87	50	858	772	5,436	1,318	--	72	14,200
Grant	--	19	120	50	881	187	5,231	1,854	57	43	9,124
Iowa	--	1	109	54	855	121	3,830	1,685	78	71	7,273
Lacrosse	1	182	69	295	202	385	9,189	1,915	28	45	13,289
Lafayette	--	--	34	5	247	24	838	353	25	21	1,899
Pepin	--	16	34	28	284	536	2,904	829	--	18	5,145
Pierce	7	12	71	84	385	129	3,007	778	--	39	5,511
Richland	--	1	155	103	1,878	443	5,465	2,280	49	85	11,828
St. Croix	21	--	48	39	285	89	1,175	378	--	21	4,888
Sauk	--	1	99	54	883	815	7,697	2,878	18	93	14,378
Trempealeau	1	208	25	24	128	167	9,369	1,868	2	88	13,691
Vernon	--	136	113	87	946	308	10,227	3,010	28	104	18,085
Total	54	729	1,228	984	8,824	4,804	82,004	24,128	340	783	147,923
SOUTHEAST UNIT											
Brown	1	64	--	--	187	122	158	52	--	18	1,078
Calumet	--	--	2	10	203	208	240	150	7	30	1,001
Columbia	1	--	10	28	213	136	4,533	837	6	29	7,046
Dane	--	3	13	28	80	31	900	590	28	88	1,811
Dodge	--	--	1	38	100	79	495	710	4	48	1,549
Door	58	12	2	1	273	166	238	11	1	4	1,715
Fond du Lac	--	1	5	10	137	132	238	134	7	33	798
Green	--	--	24	2	101	36	826	432	22	31	1,587
Green Lake	--	--	--	9	115	84	690	127	1	10	1,189
Jefferson	3	2	2	28	280	25	735	276	--	28	1,470
Kenosha	--	--	5	2	14	2	46	78	3	5	157
Kewaunee	10	10	18	--	208	382	108	22	--	18	1,187
Manitowoc	8	21	4	35	858	885	936	349	10	50	4,549
Outagamie	3	--	1	0	320	268	471	105	--	82	2,011
Ozaukee	3	2	--	19	302	217	825	101	4	30	1,586
Racine	--	2	2	2	85	--	291	81	4	8	481
Rock	--	--	19	16	25	--	808	351	10	18	1,083
Sheboygan	3	5	18	38	780	887	1,517	388	8	40	4,380
Walworth	--	10	2	2	7	--	66	93	2	8	195
Washington	--	2	5	21	452	241	1,156	400	7	35	2,988
Waukesha	--	--	7	5	160	41	568	258	9	18	1,383
Winnebago	2	4	--	--	97	35	350	8	--	1	502
Total	92	138	140	290	4,755	3,737	15,793	5,525	131	588	39,864
State total	10,900	905	5,677	1,995	119,744	55,177	198,572	48,193	479	3,155	992,308

1/ International 1/4-inch rule.

Table 22.--Harvest residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Wisconsin, 1990

(In thousand cubic feet)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	3	108	78	149	115	31	48	3	49	1,614	5	103	7	377
Forest	5	144	83	199	257	68	133	17	224	2,497	--	315	19	551
Langlade	--	58	16	136	145	59	23	3	225	2,227	--	251	9	522
Lincoln	--	75	10	63	58	39	29	14	179	1,663	--	258	6	305
Marinette	38	126	41	560	317	47	78	26	193	3,151	10	132	35	842
Menominee	6	6	814	23	68	204	--	--	31	498	--	145	13	54
Oconto	14	15	14	159	391	40	5	--	86	1,695	--	109	3	360
Oneida	--	197	43	433	467	238	158	25	257	2,712	--	202	1	851
Shawano	12	--	25	15	104	48	1	--	150	312	1	191	21	130
Vilas	1	126	18	322	320	212	323	6	141	2,207	--	127	2	942
Total	79	855	1,142	2,059	2,242	986	798	94	1,535	18,576	16	1,833	116	4,934
NORTHWEST UNIT														
Ashland	2	90	6	188	104	54	153	21	148	807	--	125	2	402
Barron	--	--	--	9	47	71	6	--	24	1,360	--	67	--	77
Bayfield	--	63	--	406	341	146	82	8	72	3,301	43	60	1	705
Burnett	--	--	--	537	201	19	--	--	12	1,182	--	11	--	72
Douglas	--	201	--	849	363	37	24	1	15	1,437	34	8	--	432
Iron	--	20	4	22	124	42	33	1	65	1,826	--	99	2	303
Polk	--	--	--	9	49	9	--	--	13	412	--	22	--	5
Price	--	115	17	66	119	19	113	22	215	1,970	--	236	4	592
Rusk	--	3	1	33	59	34	12	12	103	1,444	--	205	--	229
Sawyer	--	50	10	87	202	137	93	28	261	2,897	--	242	--	768
Taylor	--	80	28	87	53	13	60	18	182	1,118	--	145	5	362
Washburn	--	4	--	344	206	76	3	--	55	1,957	--	71	--	423
Total	2	626	66	2,637	1,868	657	579	111	1,165	19,711	77	1,291	14	4,370
CENTRAL UNIT														
Adams	--	9	--	526	447	46	--	3	20	397	--	5	--	36
Chippewa	--	3	2	55	90	63	5	6	89	1,201	--	94	--	145
Clark	--	--	--	86	133	45	--	--	162	1,127	--	69	3	254
Eau Claire	--	--	--	33	61	32	--	--	22	320	--	19	1	198
Jackson	--	--	--	720	224	61	3	--	37	597	--	36	--	129
Juneau	--	--	--	530	190	33	--	--	37	67	--	49	--	43
Marathon	--	14	26	57	105	79	6	--	174	1,310	--	213	8	185
Marquette	--	--	--	87	182	24	1	--	13	16	--	2	--	35
Monroe	--	--	--	183	132	33	4	--	24	75	--	14	--	40
Portage	11	1	3	109	181	53	1	1	48	305	--	21	2	60
Waupaca	--	--	1	37	152	39	--	--	47	196	2	83	4	6
Waushara	--	--	--	90	428	82	--	3	10	56	3	5	2	9
Wood	--	--	--	154	172	54	6	1	73	627	--	50	2	96
Total	14	27	32	2,667	2,497	644	26	14	756	6,294	5	660	22	1,236

(Table 22 continued on next page)

(Table 22 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	--	24	8	--	--	18	117	--	73	--	8
Crawford	--	--	--	--	1	12	--	--	35	230	--	43	--	2
Dunn	--	--	--	76	185	41	--	--	65	248	--	63	--	11
Grant	--	--	--	--	9	1	--	--	27	7	--	40	--	--
Iowa	1	--	--	--	31	8	--	--	19	8	--	36	--	--
Lacrosse	--	--	--	10	25	12	1	--	12	18	--	24	--	3
Lafayette	--	--	--	--	--	--	--	--	6	--	--	11	--	--
Pepin	--	--	--	7	5	1	--	--	17	33	--	22	--	1
Pierce	--	--	--	8	4	0	4	--	11	39	--	62	--	1
Richland	--	--	--	9	11	14	--	--	35	51	2	83	--	1
St. Croix	--	--	--	7	127	9	--	--	12	155	--	38	--	2
Sauk	--	--	--	21	97	28	--	--	38	53	--	55	--	1
Trempealeau	--	--	--	9	91	22	--	--	13	47	--	16	--	15
Vernon	--	--	--	--	1	9	--	--	19	24	--	69	--	1
Total	1	--	--	147	611	163	5	--	325	1,026	2	615	--	48
SOUTHEAST UNIT														
Brown	--	--	4	--	5	2	--	--	21	8	--	4	5	4
Calumet	--	--	--	--	--	--	--	--	2	2	--	10	4	--
Columbia	--	--	--	25	72	20	--	--	8	11	--	17	--	5
Dane	1	--	--	--	--	--	--	--	1	1	--	4	--	--
Dodge	--	--	--	--	--	--	--	--	--	--	--	8	--	--
Door	10	--	5	1	4	16	1	1	10	8	1	10	10	22
Fond du Lac	--	--	--	--	4	--	--	--	--	--	--	7	--	2
Green	--	--	--	--	4	--	--	--	5	2	--	4	--	--
Green Lake	--	--	--	2	8	--	--	--	1	--	--	8	--	--
Jefferson	--	--	--	--	--	--	--	--	4	--	--	7	1	--
Kenosha	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kewaunee	6	--	4	--	--	2	--	--	14	4	--	4	10	4
Manitowoc	25	--	8	--	1	22	--	--	48	15	8	32	13	1
Outagamie	--	--	--	--	4	2	--	--	19	80	1	14	--	--
Ozaukee	--	--	--	--	--	--	--	--	18	--	--	14	--	--
Racine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rock	--	--	--	--	--	--	--	--	1	--	--	--	--	--
Sheboygan	--	--	--	--	13	4	--	--	57	2	--	23	7	--
Walworth	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	19	--	--	19	--	--	28	--	--
Waukesha	--	--	--	--	16	10	--	--	4	--	--	7	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	42	--	21	28	129	97	1	1	230	131	10	201	50	38
State total	138	1,508	1,261	7,538	7,347	2,547	1,409	220	4,011	45,738	110	4,600	202	10,824

(Table 22 continued on next page)

(Table 22 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	64	--	5	--	397	158	107	34	--	9	3,464
Forest	156	--	116	1	1,063	565	205	42	--	18	6,678
Langlade	101	--	61	2	951	489	287	30	--	31	5,626
Lincoln	90	--	58	1	525	338	215	22	--	17	3,965
Marinette	166	--	22	--	985	578	489	21	--	69	7,926
Menominee	120	--	39	2	618	134	88	10	--	6	2,879
Oconto	46	4	12	--	365	349	295	8	--	13	3,983
Oneida	105	--	73	4	850	516	273	41	--	13	7,459
Shawano	55	--	12	12	582	246	444	43	--	29	2,433
Vilas	81	--	45	2	539	308	189	21	--	13	5,945
Total	984	4	443	24	6,875	3,681	2,592	272	--	218	50,358
NORTHWEST UNIT											
Ashland	90	--	42	--	548	281	333	54	--	12	3,462
Barron	23	--	5	1	61	42	395	77	--	1	2,266
Bayfield	84	--	3	--	258	196	335	10	--	7	6,121
Burnett	19	--	1	--	34	18	142	22	--	1	2,271
Douglas	62	--	--	--	56	114	87	1	--	2	3,723
Iron	64	--	29	1	367	237	90	3	--	17	3,349
Polk	--	--	6	--	29	18	291	47	--	0	910
Price	82	--	36	--	719	419	183	33	--	20	4,980
Rusk	49	--	3	3	420	180	440	112	--	13	3,355
Sawyer	143	--	24	3	872	430	531	86	--	29	6,893
Taylor	64	--	170	1	527	401	196	40	--	6	3,556
Washburn	75	--	4	--	165	84	240	31	--	6	3,744
Total	755	--	323	9	4,056	2,420	3,263	516	--	114	44,630
CENTRAL UNIT											
Adams	5	--	--	1	70	55	152	24	--	3	1,799
Chippewa	23	--	6	5	247	175	331	119	--	16	2,675
Clark	34	--	40	--	306	350	424	126	--	14	3,173
Eau Claire	5	--	11	--	65	72	159	73	--	5	1,076
Jackson	7	--	6	1	128	175	568	149	--	13	2,854
Juneau	5	--	8	11	74	79	666	185	--	13	1,990
Marathon	66	--	125	10	567	404	545	118	--	19	4,034
Marquette	4	--	0	4	47	30	238	15	--	4	702
Monroe	2	--	5	4	53	48	452	109	--	9	1,187
Portage	15	--	39	--	141	134	265	22	--	7	1,419
Waupaca	9	--	--	--	150	95	219	40	--	6	1,086
Waushara	5	--	--	--	64	49	122	17	--	4	949
Wood	12	--	12	1	164	193	394	87	--	7	2,105
Total	192	--	252	37	2,076	1,859	4,535	1,084	--	120	25,049

(Table 22 continued on next page)

(Table 22 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	19	10	10	30	73	1,123	299	--	6	1,616
Crawford	3	--	42	5	109	60	692	245	7	6	1,492
Dunn	1	--	8	6	81	95	532	123	--	6	1,541
Grant	--	2	16	6	60	22	534	189	7	5	945
Iowa	--	--	13	8	59	16	363	172	10	10	750
Lacrosse	--	17	6	17	19	47	887	194	4	5	1,301
Lafayette	--	--	4	--	21	5	83	37	4	2	173
Pepin	--	2	4	4	24	64	297	64	--	1	546
Pierce	--	1	10	8	32	16	303	79	--	5	583
Richland	--	--	19	12	148	52	547	222	8	8	1,196
St. Croix	2	--	5	5	25	9	119	39	--	2	558
Sauk	--	--	11	6	59	73	764	264	2	11	1,483
Trempealeau	--	22	4	5	13	20	958	167	--	6	1,430
Vernon	--	12	14	11	63	35	1,026	297	4	12	1,619
Total	6	75	188	101	781	567	6,230	2,411	44	89	15,433
SOUTHEAST UNIT											
Brown	--	8	--	--	18	15	18	5	--	2	113
Calumet	--	--	--	1	19	28	25	15	--	4	106
Columbia	--	--	1	4	21	16	269	73	--	4	566
Dane	--	--	1	4	7	4	92	60	5	6	188
Dodge	--	--	--	4	9	9	51	85	--	5	151
Door	7	1	--	--	24	21	25	1	--	--	178
Fond du Lac	--	--	--	1	13	18	25	13	--	4	87
Green	--	--	5	--	9	4	85	45	3	4	170
Green Lake	--	--	--	1	10	10	71	14	--	1	124
Jefferson	--	--	--	4	21	5	68	26	--	4	142
Kenosha	--	--	--	--	--	--	4	7	--	--	11
Kewaunee	1	1	2	--	18	44	11	2	--	2	129
Manitowoc	--	2	--	4	59	105	101	35	1	6	466
Outagamie	--	--	--	--	34	42	49	12	--	6	265
Ozaukee	--	--	--	2	28	27	57	11	--	4	157
Racine	--	--	--	--	5	--	21	6	--	--	34
Rock	--	--	2	2	1	--	82	35	1	2	106
Sheboygan	--	--	2	4	69	82	155	36	--	5	461
Walworth	--	1	--	--	--	--	7	9	--	--	17
Washington	--	--	--	2	39	26	112	41	--	4	292
Waukesha	--	--	--	--	13	5	50	25	1	2	133
Winnebago	--	--	--	--	11	5	34	--	--	--	50
Total	6	13	13	33	424	466	1,410	542	11	69	3,968
State total	1,945	92	1,199	204	14,212	9,013	20,030	4,825	55	610	139,436

Table 23.--Residue produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Wisconsin, 1990

(In thousand tons, green weight)

Survey Unit and type of use	Wood residue						Bark	
	Total		Coarse 1/		Fine 2/			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
NORTHEAST UNIT								
Fiber products	61.34	252.87	56.65	205.49	4.69	47.38	0.29	0.67
Charcoal	0.01	1.28	--	0.02	0.01	1.26	--	0.01
Industrial fuel	8.87	101.56	2.97	45.52	5.9	56.04	91.9	314.01
Domestic fuel	1.76	14.95	1.74	14.91	0.02	0.04	0.33	7.33
Miscellaneous 3/	24.68	65.52	--	3.55	24.68	61.97	3.19	17.07
Not used	2.26	3.42	1.17	2.67	1.09	0.75	2.98	12.33
Total	98.92	439.60	62.53	272.16	36.39	167.44	98.69	351.42
NORTHWEST UNIT								
Fiber products	18.38	65.38	18.08	55.63	0.30	9.75	0.86	1.14
Charcoal	0.11	5.28	0.11	4.56	--	0.72	--	1.11
Industrial fuel	4.23	74.26	1.87	32.94	2.36	41.32	66.45	381.59
Domestic fuel	4.55	17.06	4.50	12.78	0.05	4.28	0.87	2.92
Miscellaneous 3/	10.67	24.15	--	3.78	10.67	20.37	0.17	5.64
Not used	2.82	6.15	1.11	2.56	1.71	3.59	3.31	14.8
Total	40.76	192.28	25.67	112.25	15.09	80.03	71.66	407.20
CENTRAL UNIT								
Fiber products	13.29	68.15	11.84	58.84	1.45	9.31	--	--
Charcoal	--	2.40	--	--	--	2.40	--	--
Industrial fuel	1.62	66.23	--	25.47	1.62	40.76	73.14	112.96
Domestic fuel	2.66	23.84	2.64	23.23	0.02	0.61	0.73	2.46
Miscellaneous 3/	9.56	32.02	2.39	3.80	7.17	28.22	4.66	22.41
Not used	1.43	10.05	1.20	6.45	0.23	3.60	3.80	8.68
Total	28.56	202.69	18.07	117.79	10.49	84.90	82.33	146.51
SOUTHWEST UNIT								
Fiber products	2.00	93.82	1.98	91.16	0.02	2.66	--	--
Charcoal	0.01	1.72	0.01	1.72	--	--	--	0.19
Industrial fuel	3.72	59.08	1.45	21.06	2.27	38.02	10.94	23.18
Domestic fuel	0.28	59.97	0.25	55.63	0.03	4.34	0.04	5.45
Miscellaneous 3/	0.73	69.49	0.05	5.90	0.68	63.59	0.42	53.70
Not used	1.56	18.94	1.51	16.04	0.05	2.90	0.55	4.38
Total	8.30	303.02	5.25	191.51	3.05	111.51	11.95	86.90
SOUTHEAST UNIT								
Fiber products	1.35	27.44	1.33	24.76	0.02	2.68	--	--
Charcoal	--	--	--	--	--	--	--	--
Industrial fuel	0.10	4.18	0.10	3.25	--	0.93	2.75	2.86
Domestic fuel	2.49	10.90	2.49	10.74	--	0.16	0.41	1.45
Miscellaneous 3/	4.22	46.69	1.24	18.20	2.98	28.49	1.52	20.69
Not used	0.16	2.44	0.12	1.00	0.04	1.44	0.18	1.14
Total	8.32	91.65	5.28	57.95	3.04	33.70	4.86	26.14
STATE TOTAL								
Fiber products	96.36	507.66	89.88	435.88	6.48	71.78	1.15	1.81
Charcoal	0.13	10.68	0.12	6.30	0.01	4.38	--	1.31
Industrial fuel	18.54	305.31	6.39	128.24	12.15	177.07	245.18	834.60
Domestic fuel	11.74	126.72	11.62	117.29	0.12	9.43	2.38	19.61
Miscellaneous 3/	49.86	237.87	3.68	35.23	46.18	202.64	9.96	119.51
Not used	8.23	41.00	5.11	28.72	3.12	12.28	10.82	41.33
Total	184.86	1,229.24	116.80	751.66	68.06	477.58	269.49	1,018.17

1/ Suitable for chipping such as slabs,edgings,veneer cores,etc.

2/ Not suitable for chipping such as sawdust,veneer clippings,etc.

3/ Livestock bedding, mulch, small dimension, and specialty items.

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Hackett, Ronald L.; Whipple, James W.
1993. **Wisconsin timber industry—an assessment of timber product output and use, 1990.** Resour. Bull. NC-147. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 57 p.

Discusses recent Wisconsin forest industry trends; production and receipts of pulpwood, saw logs, and veneer logs; and production of other timber products in 1990. Reports on logging residue, on wood and bark residue generated at primary wood-using mills, and on disposition of this mill residue.

KEY WORDS: Pulpwood, saw logs, veneer logs, residue.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.

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